DOCUMENT RESUME

ED 448 765 IR 020 531

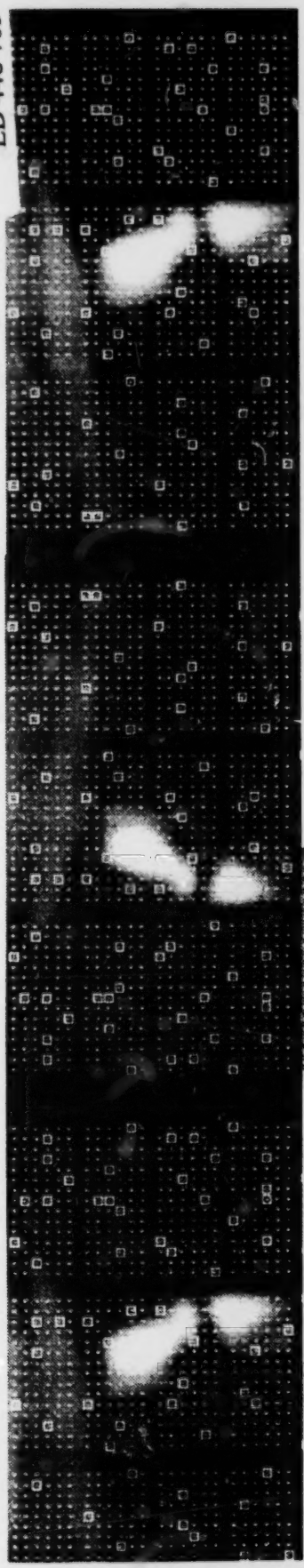
| | |
|---|---|
| AUTHOR | Rephann, Terance J. |
| TITLE | Technology Literacy Challenge Grant Evaluation, July 1999--September 2000. |
| PUB DATE | 2000-00-00 |
| NOTE | 91p. |
| PUB TYPE | Reports - Evaluative (142) |
| EDRS PRICE | MF01/PC04 Plus Postage. |
| DESCRIPTORS | Computer Literacy; *Computer Uses in Education; Curriculum Development; Educational Technology; Professional Development; *Program Evaluation; Teachers; Training |
| IDENTIFIERS | Technology Integration |

ABSTRACT

The Technology Infusion Program, evaluated in this report, was created to provide computer software and hardware training and consulting to teachers and students enrolled in Allegany County (Maryland) public and several private schools. The goals of the program were to provide professional technology support services that improve teacher technology skills, result in curriculum integration of technology, indirectly affect student use/knowledge of technology, and assist student acquisition of knowledge and exercise of problem solving skills in all areas of the curriculum. The major finding of the study is that the program substantially achieved its goals. This report is divided into nine sections. The first section describes the manner in which teacher training needs were determined. The second section details ways in which the technology infusion program was marketed and promoted to teachers, students, and parents. The third section documents the delivery of teacher training and teacher satisfaction with training. The fourth section measures teacher awareness of different computer software and hardware, and the fifth section examines the ways in which teacher technology knowledge, use, and curriculum integration have improved because of the Technology Infusion Program. The sixth section discusses student technology use, and the seventh section is concerned about parental perceptions of their children's technology exposure. The eighth section examines possible community effects. The final section examines issues and concerns that were raised in monthly progress meetings. An appendix contains survey instruments used in this evaluation and other materials used to promote Technology Infusion Program-sponsored events. (AEF)

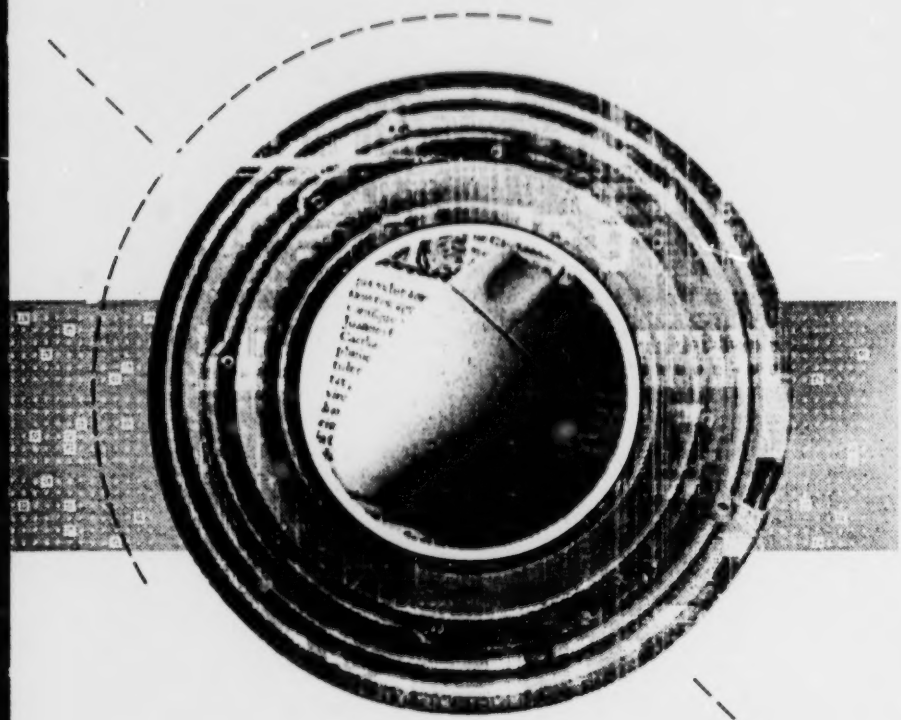
Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 448 765



# Technology Literacy Challenge Grant Evaluation

## July 1999 - September 2000



PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

T.J. Rephann

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

IR020531

BEST COPY AVAILABLE

## TABLE OF CONTENTS


Page

List of tables, figures, and appendices ..... ii & iii

1.0 Description of Technology Infusion Program ..... 1
- 1.1 Organization ..... 1
- 1.2 Goals and objectives ..... 1
- 1.3 Evaluation ..... 3

2.0 Inventory of teacher needs ..... 4

3.0 Marketing the infusion program ..... 6

4.0 Training delivery and performance ..... 7

5.0 Teacher use and curriculum integration ..... 12

6.0 Teacher learning and skill acquisition ..... 17

7.0 Student technology use ..... 19

8.0 Community learning ..... 26

9.0 Continuous improvement activities ..... 27

10.0 Summary and conclusions ..... 27

Appendices ..... 30

## LIST OF TABLES


Page

Table 2.1 Teacher technology skills/use by type ..... 5
Table 2.2 Teacher computer proficiency by school ..... 5 & 6
Table 4.1 Contact hours status reports. ..... 8
Table 4.2. Technology infusion training by subject. ..... 10
Table 4.3. Technology infusion training by school. ..... 11
Table 4.4. Contact evaluation results. ..... 12
Table 5.1. Teacher awareness/use of computer based technologies. ..... 13
Table 5.2. Computer proficiency index by school. ..... 15
Table 5.4. Computer proficiency index by grade. ..... 16
Table 6.1 Teacher technology proficiency, 1997 and 2000. ..... 18
Table 6.2 Tech Infusion participants versus non-participants. ..... 18 & 19
Table 7.1. Student technology skill inventory. ..... 20
Table 7.2 Methods of using computers ..... 20
Table 7.3 Methods of using computers, Tech Infusion participants versus non-participants. ..... 21
Table 7.4 Computer usage per week. ..... 22
Table 7.5 Uses of home computer. ..... 23
Table 7.6 Child technology exposure by school. ..... 24
Table 7.7 Classes where child uses computers as part of the curriculum. ..... 25
Table 7.8 Frequency of computer use in school. ..... 25


## LIST OF FIGURES


Figure 4.1 Professional development participation. ..... 9
Figure 4.2 Teacher training participation by grade. ..... 10
Figure 5.1 Technology use by type. ..... 14
Figure 5.2 Technology use by subject. ..... 16
Figure 7.1 Home technology access. ..... 22
Figure 7.2 Is child technology exposure adequate? ..... 23
Figure 7.3 Knowledge of number of computers available at school ..... 25

## APPENDIX


Page

APPENDIX A.1 Self-Evaluation Rubrics for Staff Computer Use ..... 30
APPENDIX A.2 Technology Infusion Brochure. ..... 31
APPENDIX A.3 Technology Expo Brochures. ..... 32
APPENDIX A.4 *Computer Bytes* Newsletter. ..... 33
APPENDIX A.5 Infusion Specialists Web Site. ..... 34
APPENDIX A.6 Web-site Tracking Report. ..... 35
APPENDIX A.7 Technology Use Survey ..... 36
APPENDIX A.8 Contact Evaluation ..... 37
APPENDIX A.9 Sample lesson plans. ..... 38
APPENDIX A.10 *Computer Training Needs Assessment* ..... 39
APPENDIX A.11 Technology Literacy Parent Survey ..... 40

# 1.0 DESCRIPTION OF TECHNOLOGY INFUSION PROGRAM

## 1.1 Overview and Organization

The Technology Infusion Program during the period July 1999-September 2000 was funded by a $250,000 grant obtained from the State of Maryland through the Technology Literacy Challenge Fund. This grant provided funds to develop an instructional support services unit that provided computer software and hardware training and consulting to teachers and students enrolled in Allegany County public schools and several private schools. Grant funds were also used to purchase curriculum software for participating schools with half of the cost being paid by the school. The Technology Infusion staff consisted of three full-time trainers/consultants who delivered on site assistance to over 30 elementary, middle, and high schools and two computer technicians. Trainers were drawn from the ranks of Board of Education (BOE) teachers and were assigned to this team on a temporary basis. Each had considerable experience in using various software applications in an educational setting and received additional training/professional development during the course of the year.

The Program was overseen by a Steering Board that met on a monthly basis to discuss training progress, budgetary issues, and project development. Steering Board members included Helen Ann Warnick, BOE Director of Elementary Education; Karen Bundy, BOE Director of Secondary Education; Ernest Kaylor, BOE Supervisor of Instructional Technology; Dennis Shankle, BOE Director of Information Technology; John Close, Coordinator of Technology Infusion Project; Terry Rephann, Director of Institutional Research at Allegany College of Maryland and External Evaluator; Jon Loff, Director of Business and Industry Training at Allegany College; and Technology Infusion team members Jill Keating and Bob Stevenson. Additional support services were provided by technology specialists from the Board of Education central office.

## 1.2 Goals and Objectives

The goals of the Technology Infusion Project were introduced in the proposal for the Technology Literacy Challenge Grant submitted by the Allegany County Board of Education in April 1999. These goals were derived primarily from two sources: the *County Five-Year BOE Technology Plan* and the *Maryland Technology Plan*.

Goals from the *County Five-Year BOE Technology Plan* were adopted to frame this program. They included the following: (1) Appropriate personnel will be hired and trained to provide school system with best available technology services, (2) Training will be provided for all instructional staff in the use of technology, (3) Students should develop and practice technology skills and ethical uses of technology, (4) Students will utilize technology that requires acquiring, understanding and sharing information, and (5) A schools to community link will be encouraged that will allow the entire community to benefit from technology in the schools.

The *Maryland Technology Plan* describes two primary goals. The first is to "Provide ongoing professional development for technology, beginning at the pre-service level" with the expectation that (1) " teachers will operate a computer independently and perform basic functions in software applications," (2) teachers "will integrate applications of technology into student learning activities and help students to use technology appropriately," and (3) "easily assessable support and assistance for technical and curriculum integration issues and problems will be provided." The second goal is to "Integrate the most appropriate and effective technology into all aspects of the education process" in order to "support knowledge and skill acquisition, effective communication, and problem solving."

In summarizing, the purpose of the program is to provide professional technology support services that improve teacher technology skills, result in curriculum integration of technology, indirectly impact student use/knowledge of technology, and assist student acquisition of knowledge and problem solving skills in all areas of the curriculum.

Specific parameters were assigned to the project in order to make best use of the available grant funds and provide quantifiable objectives. For example, 428 teachers and 2,765 students from grades 4, 7, and 11 were prioritized as the beneficiaries of the grant because of the limited staff available. However, teachers and students from other grades were allowed to participate if and when time and resources were available. In addition, the grant application specifically stated that it wanted 60% of students within the targeted grades to use the computer by January 2000 and 90% by June.

The specific skills to be emphasized in the Technology Infusion Program were developed by the Technology Infusion Team. The list was assembled after team participation in technology workshops, administration of a technology needs survey to participating teachers, and consultation with Steering Board members. The Team identified four areas of instructional emphasis including: (1) Productivity Tools (e.g., Microsoft Office – Word, Excel, Access, Powerpoint), (2) Curriculum Software (e.g., Skillsbank and Cornerstone), (3) Internet (e.g., e-mail, WWW usage, web page design, curriculum specific web sites), and (4) Hardware (e.g., digital cameras, scanners, computer projection devices). The team also desired that staff be trained in "techniques for teachers to internalize information processes to gain access to county-wide curriculum software located on the central school file server," that Special Education staff be "selected to ensure that education provided to students with special needs," and that "teachers will be trained in the development of a school home page using appropriate software."

### 1.3 Evaluation

This evaluation relies heavily on the framework introduced in the Department of Education publication *An Educator's Guide to Evaluating the Use of Technology in Schools and Classrooms* (USDOE 1998). After reviewing the case studies and recommendations in this report and goals/objectives contained in the Board of Education grant proposal, six major areas were identified in which additional follow-up was needed. These areas covered the following: (1) Evidence that the training was delivered to the groups identified in the grant, (2) Evidence that program curriculum and training activities emphasized skills that were needed, (3) Evidence that training was effective in imparting new computer technology skills to teaching staff, (4) Evidence that Infusion team activities contributed to increased use of technology in the classroom and curriculum integration, (5) Evidence that Infusion team activities were associated with increased student use of computer technology, and (6) Evidence that the community (interpreted in this study to mean primarily 'parents') is satisfied that school technology goals are being realized. In addition to these things, the USDOE (1998) recommends that grantees be able to demonstrate that increased technology utilization leads to measurable improvements in core curriculum skills (e.g., math, science, social studies). However, this recommendation will be implemented in the evaluation of a second phase of the Technology Infusion Program to occur during the 2000-2001 school year.

The remainder of this report is divided into nine sections. The first section describes the manner in which teacher training needs were determined. The second section details ways in which the technology infusion program was marketed and promoted to teachers, students, and parents. These methods included a Technology Infusion Program web-site, printed literature/newsletter, and conferences. Section three documents the delivery of teacher training and teacher satisfaction with training. Section four measures teacher awareness of different computer software and hardware, and section five examines the ways in which teacher technology knowledge, use, and curriculum integration have improved because of the Technology Infusion Program. The sixth section discusses student technology use, and the seventh section is concerned about parental perceptions of their children's technology exposure. The eighth section examines possible community effects. The final section examines issues and concerns that were raised in monthly progress meetings. An appendix contains survey instruments used in this evaluation and other materials used to promote Technology Infusion Program sponsored events.

## 2.0 INVENTORY OF TEACHER NEEDS

In August and September 1999, teachers from the targeted schools were invited to a series of Technology Infusion seminars on a school by school basis. After the presentation, each participant was asked to complete a "Self Evaluation Rubric for Staff Computer Use." The survey instrument, adopted from USDOE (1998), is shown in Appendix A.1. Five-hundred fifty-seven surveys were received from twenty-six schools. Five schools (Alternative School, Barton Elementary, Career Center, Cash Valley Elementary, and St. Peter's) are not represented.

According to the results of this survey (see table 2.1), only 60% of respondents reported being proficient at using a computer for basic operations. The other 40% indicated that they "do not use a computer" or "use the computer to run a few specific, pre-loaded programs." Teacher computer skills varied by the school surveyed (see table 2.2), with high schools generally reporting a higher level of proficiency (Allegany 78%, Westmar High 76%, Bishop Walsh 67%, and Fort Hill 61%) than elementary/middle schools. Teachers from Frost Elementary (28%), Parkside (31%), and West Side (40%) reported the lowest levels of basic computer proficiency.

Computer knowledge also varied by software application. Eighty percent or more of the respondents indicated that they had some knowledge of basic computer operation, word processing, and file management. However, over one-third did not use or did not reply to questions concerning student assessment, database use, and spreadsheet use.

**Table 2.1 Teacher technology skills/use by type, percentage of total respondents.**

(4) advanced usage, (3) intermediate usage, (2) basic usage, (1) not aware/do not use.

| | (4) | (3) | (2) | (1) | NA | Mean |
|---|---|---|---|---|---|---|
| Word processing | 19 | 49 | 22 | 7 | 3 | 2.81 |
| Basic computer operation | 22 | 38 | 35 | 5 | 0 | 2.78 |
| File management | 4 | 47 | 36 | 9 | 4 | 2.48 |
| Network and email use | 6 | 44 | 28 | 20 | 2 | 2.37 |
| Curriculum integration | 7 | 17 | 55 | 11 | 10 | 2.24 |
| Ethical use understanding | 7 | 25 | 42 | 19 | 7 | 2.21 |
| Graphics and multimedia | 8 | 25 | 37 | 29 | 1 | 2.12 |
| Spreadsheet use | 7 | 17 | 37 | 36 | 3 | 1.94 |
| Database use | 5 | 15 | 38 | 38 | 4 | 1.84 |
| Student assessment | 1 | 14 | 30 | 50 | 5 | 1.64 |

**Table 2.2 Teacher computer proficiency by school, percentage of total who report being non-users or only basic users ( (1) and (2))**

| | |
|---|---|
| Frost Elementary | 72% |
| Parkside Elementary | 69% |
| West Side Elementary | 60% |
| Washington Middle | 58% |
| Oldtown K-12 | 56% |
| Northeast Elementary | 52% |
| Flintstone K-12 | 50% |
| St. John Neumann | 47% |
| Calvary Christian | 43% |
| South Penn Elementary | 43% |
| St. Michael's | 42% |

**Table 2.2 Teacher computer proficiency by school *(continued)***

| | |
|---|---|
| Braddock Middle School | 41% |
| Beall Elementary | 40% |
| **Average** | **40%** |
| | |
| Fort Hill High School | 39% |
| Westmar Middle School | 37% |
| Cresaptown Elementary | 36% |
| Westernport Elementary | 36% |
| Beall Jr./Sr. High | 33% |
| Bishop Walsh High School | 33% |
| Bel Air Elementary | 33% |
| Mt. Savage K-12 | 32% |
| George's Creek Elementary | 30% |
| John Humbird Elementary | 29% |
| Westmar High School | 24% |
| Allegany High School | 22% |
| New Dominion | 17% |

## 3.0 MARKETING THE INFUSION PROGRAM

Teachers and students were made aware of Technology Infusion Program activities and services through a variety of media. Brochures such as a Technology Infusion flyer (see figure A.2) introduced teachers to training opportunities available through the program. A monthly newsletter entitled *Computer Bytes* (see figure A.3) announced upcoming Technology Infusion Program organized events, described exemplary student and teacher uses of computer technology, showcased educational software products, and served as an outlet for any new ideas for integrating technology effectively into the classroom. Three copies of this newsletter were sent to each participating school. Also, copies were distributed to teacher representatives at the School Improvement, Climate Action, Point of Contact, and other action team meetings and content area supervisors. Student programs such as the 3rd Annual Technology in the Marketplace Exposition and

Technology Showcase 2000 (see figure A.4) gave the Program an opportunity to introduce the community to the goals and achievements of Technology Infusion. Finally, the Technology Infusion Team maintained a Program webpage at URL: <http://infusion.allconet.org> (see figure A.5) that allowed teachers to schedule Infusion Team visits, monitor the activities of the Team, access various web-based curriculum resources, and read issues of the *Computer Bytes* newsletter. The site, which was monitored with web tracking software, was accessed an average of 43 times each day (see figure A.6 for a full tracking report for the period 3/30/2000-5/17/2000).

## 4.0 TRAINING DELIVERY AND PERFORMANCE

The Technology Infusion Program established goals for the amount of contact hours that would be delivered to school participants. For the entire system, 3,885 hours of training and consultation were proposed with the distribution of these hours among schools as listed in table 4.1. Contact hours were assigned to the various schools on the basis of how many students were enrolled from targeted grades. Table 4.1 also shows the number of hours that were actually delivered during the school year. Overall, approximately one-third of the proposed hours were delivered. Several reasons can be offered for the shortfall. First, the set goals were unrealistic because it would require that the Technology Infusion Program be staffed by three full-time staff members who spend their entire time in on-site training activities. For example, to meet the time requirements for only the four largest schools (Fort Hill 257, Beall 323, Washington 337, and Allegany 249 hours) would have required 166 full-time on-site staff days. However, this was not possible because of administrative responsibilities, class preparation, professional development activities, and travelling from site to site. Second, for approximately three months of the program, the program was staffed by fewer than three people because of personnel reassignments.

**Table 4.1 Contact hours status reports**

| School | Proposed Hours | Final Hours | % Complete |
|---|---|---|---|
| Allegany High School | 249.2 | 127.33 | 51.10% |
| Barton Elementary | 36.4 | 24.0 | 65.93% |
| Beall Elementary | 74.9 | 76.25 | 101.80% |
| Beall Jr./Sr. High | 323.4 | 39.08 | 12.09% |
| Bel Air Elementary | 54.6 | 44.33 | 81.20% |
| Braddock Middle School | 392 | 46.33 | 11.82% |
| Bishop Walsh | 170.1 | 13.00 | 7.64% |
| Cash Valley Elementary | 59.5 | 57.50 | 96.64% |
| Calvary Christian | 85.4 | 14.0 | 16.39% |
| Career Center | 203.7 | 10.08 | 4.95% |
| Cresaptown Elementary | 95.2 | 51.25 | 53.83% |
| Flintstone K-12 | 122.5 | 51.50 | 42.04% |
| Fort Hill High School | 256.9 | 75.83 | 29.52% |
| Frost Elementary | 70.7 | 67.25 | 95.12% |
| Georges Creek Elementary | 65.9 | 23.50 | 35.66% |
| John Humbird Elementary | 76.3 | 32.25 | 42.27% |
| Mount Savage K-12 | 183.4 | 26.83 | 14.63% |
| New Dominion | 21.7 | 7.50 | 34.56% |
| Northeast Elementary | 74.9 | 14.25 | 19.03% |
| Oldtown K-12 | 73.5 | 10.50 | 14.29% |
| Parkside Elementary | 63.7 | 73.75 | 115.78% |
| St. John Newman | 74.9 | 10.75 | 14.35% |
| South Penn Elementary | 105 | 100.25 | 95.48% |
| St. Michael's | 30.1 | 3.75 | 12.46% |
| St. Peter's | 147 | 20.50 | 13.95% |
| Washington Middle School | 337.4 | 97.33 | 28.85% |
| Westmar High School | 131.6 | 12.67 | 9.63% |
| Westmar Middle | 149.8 | 37.25 | 24.87% |
| West Side Elementary | 99.4 | 35.50 | 35.71% |
| Westernport Elementary | 56 | 52.50 | 93.75% |

A Technology Use Survey (see Appendix A.7) was conducted in the middle of the school year as a tool to gauge teacher and student use of computers in the classroom. Four-hundred sixty-two teachers participated and all but three schools (Alternative School, Oldtown, and South Penn Elementary) were represented. Tabulated results show that approximately two-thirds of all teachers had participated in the Technology Infusion Program (see figure 4.1). Proportionally more respondents reported participating in the Program than "School Based Training" (which some, no doubt, confused with Technology Infusion Training because some training activities were organized into school workshops) or "Classes at Allegany College." Participation in Infusion training was higher from elementary and middle schools (see figure 4.2). This result is not entirely surprising since the program targeted grades 4 and 7. In contrast, participation was never more than fifty percent for grades 9-12, although grade eleven was targeted also. Participation also varied by subject (see table 4.2), with teachers drawn from science and mathematics more likely to receive training than others. For five schools, all teachers participated in the program (Beall Elementary, West Side, Bel Air, John Humbird, Cresaptown) and for four others (Westmar Middle, Northeast, Braddock, and George's Creek) 90% or more did (see table 4.3).

**Figure 4.1 Professional development participation**

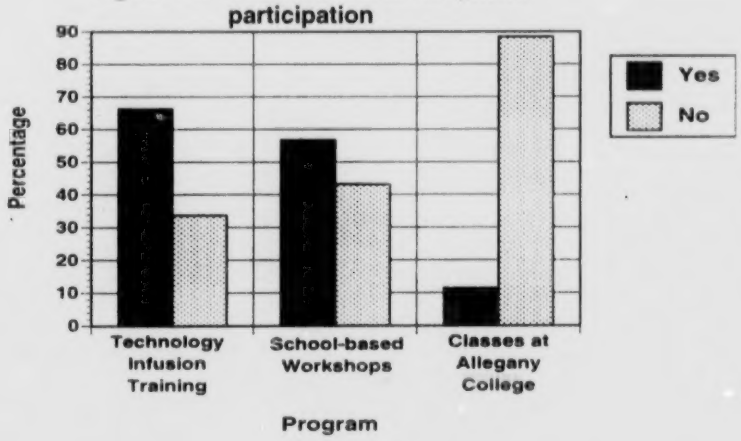


Figure 4.2 Teacher training participation by grade

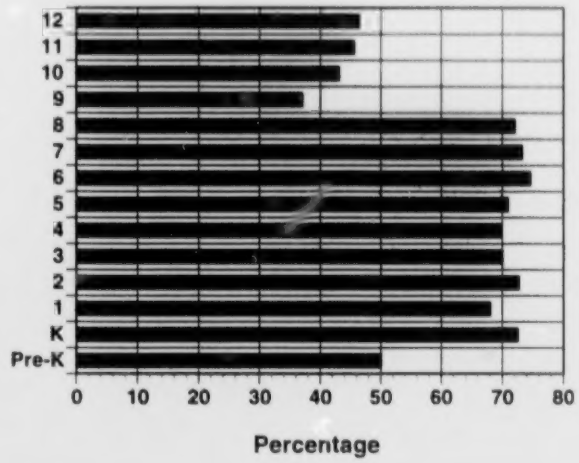



**Table 4.2 Technology infusion training by subject, percentage of teachers who received technology infusion training**

| Subject | Number of Teachers Responding | % Receiving Training |
|---|---|---|
| Science | 34 | 85.3% |
| Math | 49 | 81.6% |
| Elementary | 141 | 77.3% |
| English | 55 | 74.5% |
| Computers | 15 | 66.7% |
| Social Studies | 38 | 60.5% |
| Health | 12 | 58.3% |
| Art | 19 | 57.9% |
| Language | 9 | 55.6% |
| Other | 41 | 53.7% |
| Physical Ed. | 16 | 50% |
| Special Ed. | 43 | 48.8% |
| Vocational Ed. | 26 | 42.3% |

**Table 4.3 Technology infusion training by school, percentage of teachers who received technology infusion training**

| | Number of Teachers Responding | % Receiving Training |
|---|---|---|
| Beall Elementary | 13 | 100% |
| West Side Elementary | 11 | 100% |
| Bel Air Elementary | 11 | 100% |
| John Humbird Elementary | 10 | 100% |
| Cresaptown Elementary | 9 | 100% |
| Westmar Middle School | 21 | 95.2% |
| Northeast Elementary | 13 | 92.3% |
| Braddock Middle School | 41 | 90.2% |
| George's Creek Elementary | 10 | 90% |
| Frost Elementary | 21 | 85.7% |
| Westernport Elementary | 14 | 85.7% |
| Parkside Elementary | 11 | 81.8% |
| Barton Elementary | 11 | 72.7% |
| Career Center | 28 | 71.4% |
| Flintstone K-12 | 13 | 61.5% |
| Fort Hill High School | 35 | 45.7% |
| Beall Jr./Sr. High | 14 | 42.9% |
| Cash Valley Elementary | 17 | 41.2% |
| Westmar High School | 16 | 37.5% |
| Allegany High School | 30 | 30% |
| Mt. Savage K-12 | 35 | 17.1% |

The correlation between need and amount of assistance received by schools was computed to be small and positive ($\rho$=.29). That is to say, schools with higher needs as indicated by the percentage of school teachers who reported having no or little computer knowledge were more likely to receive technology assistance than other schools. Obviously, since some high need schools received relatively little assistance, other factors such as principal/administrative support and encouragement for technology diffusion activities and hardware/software availability at the school site, played some role in the outcomes.

Teacher satisfaction with training activities was high (see figure 4.4). For instance, teachers who participated in the orientation session for the Technology Infusion Program in September/early October provided positive feedback (see Appendix A.8 for a copy of the evaluation instrument) regarding the presentations. Approximately 90% or more of the three-hundred thirty-six participants drawn from fifteen schools agreed that the "presenter was well-informed," that the purpose of the session was "clearly stated," that the session met "needs" and "expectations," and that it "taught how to use technology."

**Table 4.4. Contact evaluation results, percentage of total (based on 336 surveys from 15 schools)**

(5)=Strongly Agree, (4)=Agree, (3)=Mostly Agree, (2)=Mostly Disagree, (1)=Strongly Disagree

| | (5) | (4) | (3) | (2) | (1) | NA | Mean |
|---|---|---|---|---|---|---|---|
| Presenter well informed | 75 | 15 | 7 | 0 | 1 | 2 | 4.68 |
| Purpose clearly stated | 71 | 20 | 7 | 0 | 1 | 1 | 4.60 |
| Met expectations | 35 | 38 | 20 | 2 | 1 | 4 | 4.06 |
| Appropriate for needs | 35 | 33 | 23 | 3 | 3 | 2 | 3.96 |
| Presentation met needs | 30 | 39 | 21 | 5 | 2 | 3 | 3.92 |
| Showed way to use tech | 31 | 36 | 23 | 4 | 3 | 3 | 3.90 |

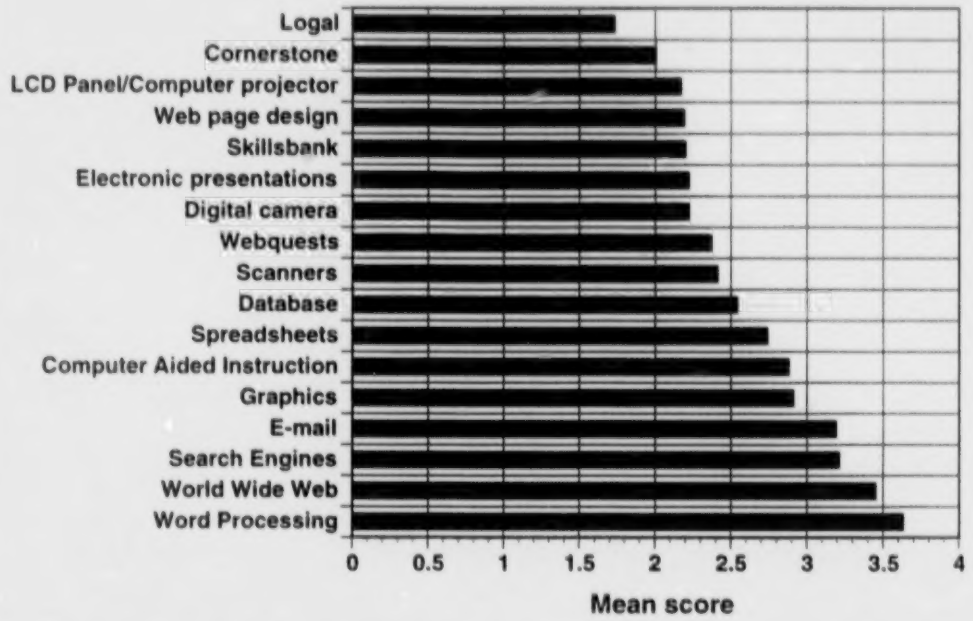
## 5.0 TEACHER USE AND CURRICULUM INTEGRATION

Teachers were asked to estimate their use of specific computer software and hardware for educational purposes in the Technology Use Survey. Responses to these questions are tabulated in table 5.1. It shows that awareness of productivity and Internet software and various kinds of hardware is high (90% plus) but usage is not widespread for some applications. A relatively high percentage of respondents indicated that they were unaware of several specific curriculum tools promoted by the Technology Infusion team such as Skillsbank, Cornerstone, Logal, and Webquests. Ranking the computer tools by its mean awareness/use indicator (see table 5.2 and figure 5.1) shows that teachers are most at home with productivity and Internet tools, followed by hardware peripherals and curriculum software.

**Table 5.1. Teacher awareness/use of computer based technologies, percentage of total and mean rating.**

| | Use Frequently (4) | Use Occasionally (3) | Do not Use (2) | Never heard of (1) | Mean |
|---|---|---|---|---|---|
| PRODUCTIVITY TOOLS | | | | | |
| Word processing (n=451) | 71.8 | 19.7 | 8.4 | 0.0 | 3.63 |
| Spreadsheets (n=443) | 20.1 | 35.0 | 43.3 | 1.6 | 2.74 |
| Database (n=436) | 13.3 | 29.8 | 54.4 | 2.5 | 2.54 |
| Graphics (n=446) | 24.7 | 42.8 | 30.9 | 1.6 | 2.91 |
| Electronic presentations (n=434) | 3.5 | 18.2 | 75.6 | 2.8 | 2.22 |
| CURRICULUM SOFTWARE | | | | | |
| Computer Aided Instruction (n=427) | 26.2 | 38.6 | 32.1 | 3.0 | 2.88 |
| Skillsbank (n=413) | 10.9 | 17.7 | 52.1 | 19.4 | 2.20 |
| Cornerstone (n=411) | 9.5 | 10.5 | 50.4 | 29.7 | 2.00 |
| Logal (n=411) | 1.7 | 5.4 | 57.4 | 35.5 | 1.73 |
| INTERNET | | | | | |
| World Wide Web (n=443) | 57.8 | 30.0 | 11.3 | 0.9 | 3.45 |
| e-mail (n=437) | 47.6 | 24.5 | 27.0 | 0.9 | 3.19 |
| Web page design (n=427) | 4.7 | 12.2 | 80.8 | 2.3 | 2.19 |
| Search engines (n=439) | 47.8 | 30.3 | 17.3 | 4.6 | 3.21 |
| Webquests (n=427) | 9.6 | 29.7 | 48.2 | 12.4 | 2.37 |
| HARDWARE | | | | | |
| Digital camera (n=436) | 5.3 | 16.3 | 73.9 | 4.6 | 2.22 |
| Scanners (n=439) | 9.8 | 24.8 | 61.5 | 3.9 | 2.41 |
| LCD Panel/Computer proj. (n=429) | 5.1 | 14.2 | 73.4 | 7.2 | 2.17 |

**Figure 5.1 Technology use by type**




A computer proficiency index was computed for each individual by summing up the awareness/use measures for each computer tool. An average index value was calculated for each school, subject area, and grade. The maximum possible score for the index is 68 (4 maximum points multiplied by the 17 technologies). The minimum score is seventeen (1 point multiplied by 17). Results show that there is substantial variation in the average proficiency levels of teachers by school (see table 5.2) and subject (see figure 5.2) but little by grade level (see table 5.4). Other than the generally lower scores obtained by high schools (not surprising since some of the curriculum tools included on the survey are aimed at an elementary education audience), the only other distinguishable pattern is the tendency for private schools (St. Michael's, St. John Neuman's, and St. Peter's) to rank relatively low. Also, teachers in the areas of computers, science, and math scored higher than other disciplines. Surprisingly, however, given the program emphasis on grade levels, there is very little variation in computer competencies by grade.

Additional evidence of teacher use/curriculum integration of computer technology can be found in the lesson plans of individual teachers. The Technology Infusion Team collected several dozen lesson plans that demonstrate computer use from

a variety of subjects, including math, science, English, and social studies. Two representative lesson plans are included in Appendix A.9.

**Table 5.2. Computer proficiency index by school**

| School | Index Value |
|---|---|
| St. Peter's | 39.40 |
| West Side Elementary | 39.86 |
| St. Michael's | 40.70 |
| Northeast Elementary | 41.30 |
| Cash Valley Elementary | 42.23 |
| Parkside Elementary | 42.37 |
| Fort Hill High School | 42.62 |
| Westmar Middle School | 42.93 |
| St. John Neumann | 43.00 |
| Westmar High School | 43.48 |
| Beall Jr./Sr. High | 43.58 |
| Career Center | 43.59 |
| Mount Savage K-12 | 43.79 |
| Frost Elementary | 43.79 |
| Average | 44.06 |
| Allegany High School | 44.35 |
| Barton Elementary | 44.87 |
| George's Creek Elementary | 44.92 |
| Braddock Middle School | 45.31 |
| Cresaptown Elementary | 45.43 |
| John Humbird Elementary | 46.21 |
| Beall Elementary | 46.43 |
| Bel Air Elementary | 46.53 |
| Westernport Elementary | 47.15 |
| New Dominion | 47.67 |
| Flintstone K-12 | 47.83 |
| Washington Middle School | 49.75 |

**Figure 5.2 Technology use by subject**

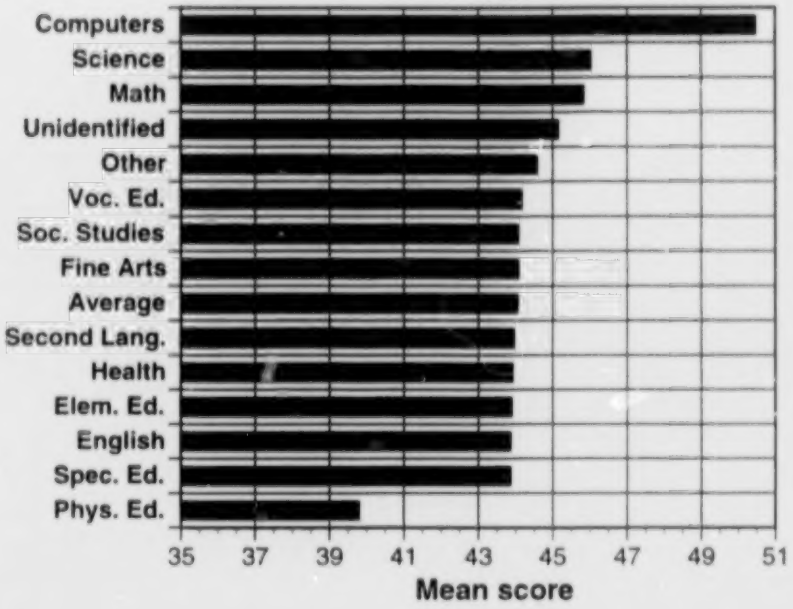



**Table 5.4. Computer proficiency index by grade**

| Subject | Num | Index |
|---|---|---|
| Pre-K | 14 | 44.44 |
| K | 54 | 44.38 |
| 1 | 58 | 43.17 |
| 2 | 65 | 44.52 |
| 3 | 67 | 44.11 |
| 4 | 62 | 45.17 |
| 5 | 63 | 44.90 |
| 6 | 72 | 44.86 |
| 7 | 76 | 43.92 |
| 8 | 73 | 44.65 |
| 9 | 95 | 44.48 |
| 10 | 133 | 44.52 |
| 11 | 144 | 45.02 |
| 12 | 144 | 44.93 |
| 4, 7 and 11 | 207 | 44.59 |
| Others | 255 | 43.40 |

## 6.0 TEACHER LEARNING/SKILL ACQUISITION

Two research designs are used to assess the impact of the Technology Infusion efforts on teacher computer technology use. The first method, called "before and after," looks at teacher technology use before the Technology Infusion Program began and after it was in place. Because a detailed questionnaire with similar questions to those appearing in the Technology Use Survey was administered to 356 Allegany Public School teachers in 1997 (see Appendix A.10 for a copy of the *Computer Training Needs Assessment*), it was possible to measure teacher progress over the intervening three year period. The biggest problem with this method is that factors other than Technology Infusion training may have affected teacher computer proficiency; other technology training programs were used during this three year period, the surveyed population is slightly different for the former survey because it did not include private school teachers and was completed by only a subset of the population; and the mere progress of time should increase technological awareness and use.

The second method, called "with and without," compares the progress of teachers who participated in the Technology Infusion program to those who did not. The primary drawback of this method, selection bias, occurs if the participants differ in some systematic way from non-participants. For instance, if non-participants tend to be more fearful of technology and consequently less computer savvy, differences in technology usage may overestimate the actual impact of the Technology Infusion program. Taken together, however, the results may suggest a program effect.

Table 6.1 shows that computer proficiency improved in all but one area, computer databases. Since proportionally fewer teachers participated in the 1997 mail survey (about 75%), one might anticipate that less proficient computer users would not respond, which would tend to inflate the proficiency figures. Therefore, it is unlikely that teachers actually 'dislearned' during the 1997-2000 period. Use of spreadsheets and word processing was only slightly higher. The biggest gains occurred in the use of Internet technology such as e-mail and the World Wide Web.

**Table 6.1 Teacher technology proficiency, 1997 and 2000.**

| | % indicating "do not use" or "never heard of" | |
|---|---|---|
| | 1997 | 2000 |
| Word processing | 11% | 8% |
| Database | 50% | 57% |
| Spreadsheets | 46% | 45% |
| Word Wide Web | 34% | 12% |
| e-mail | 45% | 28% |

Table 6.2 shows similar results. Technology Infusion Program participants reported a higher level of proficiency in every software/hardware category except web page design, digital cameras, and scanners—technologies with which few participants or non-participants were familiar. In addition, participants reported being more proficient in a statistically significant sense for nine areas, including word processing, computer aided instruction, Skillsbank, Cornerstone, Logal, World Wide Web, Search Engines, Webquests, and LCD Panel/Computer Projectors. Statistically significance is used to indicate the reliability of the differences if one views the surveyed teachers as a random sample from a larger population of potential teacher trainees who might receive the Infusion training in the future.

**Table 6.2 Tech Infusion participants versus non-participants, mean proficiency**

| | Tech Infusion | None |
|---|---|---|
| Word processing | 3.71 | 3.52* |
| Spreadsheets | 2.75 | 2.72 |
| Database | 2.55 | 2.52 |
| Graphics | 2.92 | 2.89 |
| Electronic presentations | | |
| | | |
| CURRICULUM SOFTWARE | | |
| Computer Aided Instruction | 2.98 | 2.74* |
| Skillsbank | 2.31 | 2.05* |
| Cornerstone | 2.15 | 1.78* |
| Logal | 1.78 | 1.67* |

**Table 6.2 Tech Infusion participants versus non-participants.** ***(continued)***

| | | |
|---|---|---|
| INTERNET | | |
| World Wide Web | 3.52 | 3.46* |
| e-mail | 3.23 | 3.13 |
| Web page design | 2.17 | 2.22 |
| Search engines | 3.30 | 3.09* |
| Webquests | 2.51 | 2.14* |
| | | |
| HARDWARE | | |
| Digital camera | 2.19 | 2.26 |
| Scanners | 2.38 | 2.43 |
| LCD Panel/Computer projector | 2.24 | 2.08* |

* statistically significant at $\alpha$=10.

## 7.0 STUDENT TECHNOLOGY USE

Results from the Technology Use Survey, which was administered in January 2000, were used to determine student achievement of computer proficiency benchmarks established in the grant application. The goal was to have 60% of students using computers by January 2000 and 90% by the end of the year. Teachers were asked to estimate/project the percentages of their students who were/would be using computers, software, and the Internet in school during this time period. Table 7.1 shows average estimates for three dates, September 10th which represents the start of the school year, January 15th which corresponds to the middle of the year, and June 9th which concluded the school year. The estimates show that slightly less than three quarters had used computers in school at the beginning of the school year, four-fifths by the school year midpoint, and almost nine in ten would be using them by the end of the year. The same percentages were slightly lower when only grades 4, 7, and 11 are considered. Using this information, one can conclude that the initial benchmarks were rather conservative thereby ensuring that the January goal was met. However, student use fell short of the June goal.

**Table 7.1. Student technology skill inventory all grades, (grades 4, 7, and 11 in parentheses).**

| | Sept. 10, 1999 | Jan. 15, 2000 | June 9, 2000 |
|---|---|---|---|
| Computers in general | 72% (66) | 80% (70) | 87% (79) |
| Productivity software | 22% (27) | 28% (31) | 36% (41) |
| Curriculum software | 50% (36) | 59% (44) | 68% (54) |
| Internet activity | 37% (44) | 48% (52) | 60% (63) |

The most popular use of computers in the school is to run curriculum software applications followed by Internet activity. Productivity software (i.e., word processing, graphics, databases, spreadsheets), the focus of much teacher training over the past several years, is much further down the list. These results are reinforced by the findings of table 7.2 which shows that the most common student use of computers is "to support individualized learning" followed by "for remediation for basic skills" which are likely to be undertaken with curriculum software. "To plan, draft, proofread, revise, and publish written text," a task likely to be assisted with productivity software is listed third. A large gap exists between these uses and others listed, although these findings vary by curriculum.

**Table 7.2 Methods of using computers.**

| | % |
|---|---|
| to support individualized learning | 53.3% |
| for remediation for basic skills | 51.6% |
| to plan, draft, proofread, revise, and publish written text | 46.9% |
| to perform calculations | 29.8% |
| To organize and store information | 29.7% |
| to create graphics or visuals of non-data products (e.g., diagrams, pictures, figures) | 28.4% |
| To collect data and perform measurements | 22.8% |
| To create visual displays of data/information (e.g., graphs, charts, maps) | 21.9% |
| To manipulate/analyze/interpret data | 20.3% |
| to create visual presentations | 16.5% |
| to create models or simulations | 11.8% |
| to compensate for a disability or limitation | 10.8% |

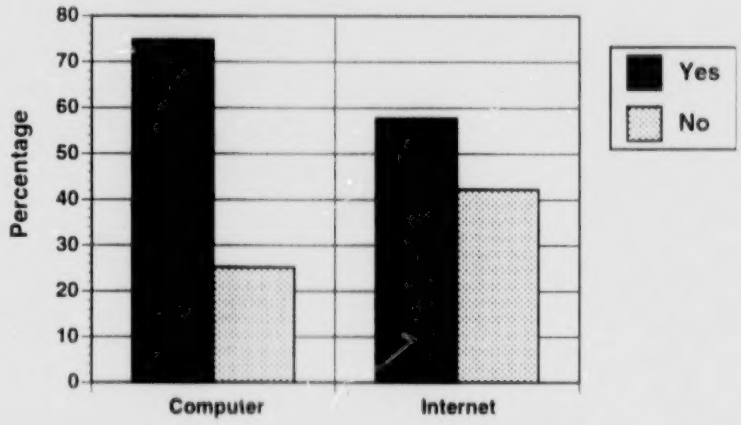
Table 7.3 shows that Technology Infusion participants are more likely to involve students in certain computer uses than non-participants. With the exception of "to create visual presentations," students were more likely to be reported as using computers for learning activities. In addition, three activities were statistically significant: "to support individualized learning," "for remediation for basic skills," and "to create graphics or visuals of non-data products."

**Table 7.3 Methods of using computers, Tech Infusion participants versus non-participants**

| | Tech Infusion | None |
|---|---|---|
| To organize and store information | 30% | 29% |
| To collect data and perform measurements | 23% | 22% |
| To manipulate/analyze/interpret data | 21% | 19% |
| To create visual displays of data/information (e.g., graphs, charts, maps) | 23% | 20% |
| to plan, draft, proofread, revise, and publish written text | 49% | 44% |
| to create graphics or visuals of non-data products (e.g., diagrams, pictures, figures) | 31% | 25%* |
| to create visual presentations | 16% | 17% |
| to perform calculations | 32% | 26% |
| to create models or simulations | 12% | 11% |
| to support individualized learning | 57% | 48%* |
| for remediation for basic skills | 56% | 45%* |
| to compensate for a disability or limitation | 11% | 11% |

A survey of parents was conducted in order to gauge student computer use at home and determine parental satisfaction with school computer technology education efforts (see Appendix A.11 for a copy of this survey). Two-thousand four-hundred sixty-five surveys were returned, but since these represented only about one quarter of parents, the tabulated results may not be representative of all parents. The results possibly are biased in favor of those who are interested in computer technology issues and have a higher socioeconomic status. Results from this survey show that approximately three-quarters of students have home computers available and approximately three-quarters of these home computer owners have Internet access (see figure 7.1). Therefore, approximately 55% of students have Internet access.

Figure 7.1 Home technology access




Home computers are used on a fairly regular basis by students. About 85% of children with access to a home computer use it more than one hour per week while 65% of those with Internet access use it more than an hour each week (see table 7.4). When using the computer for personal use, the Internet (web browsing and e-mail) is the favored application, while school use is more likely to involve the use of word processing (see table 7.5).

**Table 7.4 Computer usage per week, percentage of respondents.**

| | Home computer (n=1,837) | Internet access (n=1,433) |
|---|---|---|
| Less than an hour | 14.2% | 35.0% |
| 1-2 hours | 28.8% | 25.4% |
| 3-4 hours | 25.8% | 16.4% |
| more than 4 hours | 31.2% | 23.2% |

**Table 7.5 Uses of home computer, number of respondents.**

| | Personal Use | School Use |
|---|---|---|
| Word Processing | 910 | 1,057 |
| Spreadsheets | 149 | 217 |
| Graphics | 505 | 457 |
| e-mail | 922 | 231 |
| Web-browsing | 932 | 692 |
| Multimedia Presentations | 366 | 393 |

Most parents (59%) believe that their children are getting an adequate exposure to computer technology at school (see figure 7.2). However, the level of satisfaction varies widely by school, with a majority of parents of Alternative School, Allegany High, Washington Middle, Westmar Middle, Parkside, and Braddock Middle students expressing dissatisfaction with technology education (see table 7.6). While most parents are unaware of how many computers are being utilized in the classroom (see figure 7.3), they are aware of the courses where computer technology is used and the frequency of student use. According to parents, students are most likely to use computers in reading, math, and science. Moreover, approximately 80% of students are estimated to use school computers at least once a week.

**Figure 7.2 Is child technology exposure adequate?**

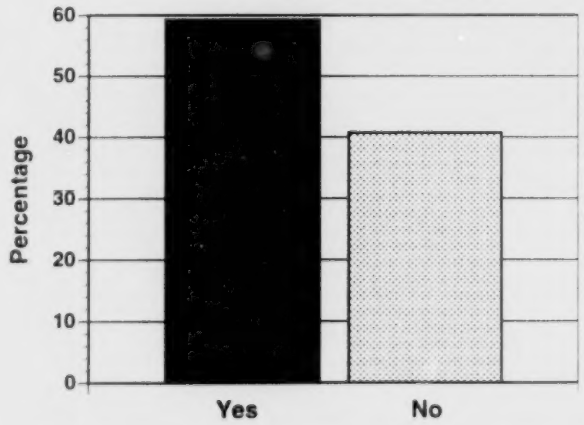


**Table 7.6 Child technology exposure by school (percentage of parents indicating it is adequate)**

| | % | Number responding to survey |
|---|---|---|
| Alternative School | 16.7% | 6 |
| Allegany High School | 37.2% | 137 |
| Washington Middle School | 41.6% | 113 |
| Westmar Middle School | 44.6% | 110 |
| Parkside Elementary | 45.2% | 42 |
| Braddock Middle School | 45.8% | 179 |
| Westmar High School | 50.0% | 60 |
| Beall Jr./Sr. High | 50.8% | 183 |
| West Side Elementary | 53.7% | 67 |
| Fort Hill High School | 55.9% | 118 |
| South Penn Elementary | 60.7% | 89 |
| Cash Valley Elementary | 63.3% | 109 |
| Career Center | 67.3% | 55 |
| Oldtown K-12 | 67.9% | 28 |
| Northeast Elementary | 70.1% | 97 |
| Frost Elementary | 72.1% | 161 |
| George's Creek Elementary | 72.6% | 51 |
| John Humbird Elementary | 73.8% | 84 |
| Flintstone K-12 | 74.3% | 35 |
| Barton Elementary | 75% | 36 |
| Mt. Savage K-12 | 76.7% | 103 |
| Cresaptown Elementary | 77% | 113 |
| Bel Air Elementary | 77.8% | 27 |
| Westernport Elementary | 94.1% | 34 |

Figure 7.3 Knowledge of number of computers available at school

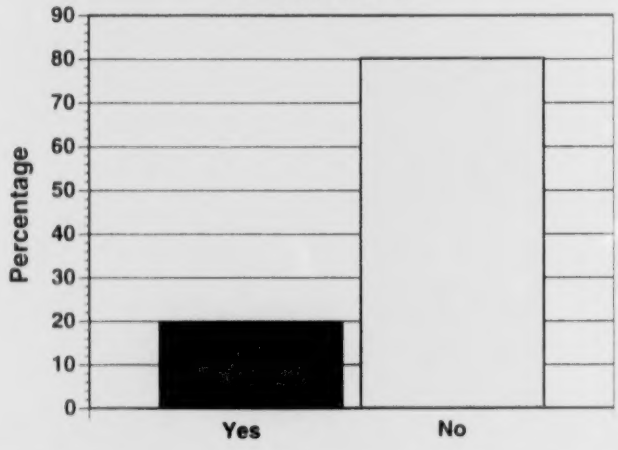



**Table 7.7 Classes where child uses computers as part of the curriculum**

| | # |
|---|---|
| Reading | 671 |
| Mathematics | 625 |
| Science | 454 |
| Language arts | 414 |
| Social studies | 350 |
| Technology | 316 |
| Health | 31 |
| Consumer Education | 18 |
| Physical education | 1 |
| Other | 564 |

**Table 7.8 Frequency of computer use in school (n=2,017), percentage of respondents.**

| | |
|---|---|
| Once a day | 17.5% |
| Once a week | 31.0% |
| Twice a Week | 28.3% |
| Once a month | 13.8% |
| Twice a month | 9.3% |

Student projects provide yet another source of information about student involvement with computer technology. A computer Technology Showcase organized by the Technology Infusion Team on April 7th 2000 exhibited 28 different exemplary projects developed by students during the school year (see Appendix A.4). These projects can be organized into several different categories, including: (1) multimedia demos, (2) Internet web page authorship, (3) Internet webquests and search engines usage for student research, (4) computer programming, (5) computer hardware demonstrations, (6) desktop publishing, and (7) graphics/digital imaging. The Showcase provided an opportunity for parents, teachers, other students, and the community to see what students had learned during the year. In addition to Showcase activities, by the end of the school year, each school had, with student participation, posted school homepages on the County web server, ALLCONET. Several of these homepages were constructed exclusively by students.

## 8.0 COMMUNITY LEARNING

The Technology Infusion Program provided community links in a number of ways already mentioned, including maintaining a web page presence, presenting to PTA (Parent-Teacher Association) meetings, sponsoring student technology open houses, and facilitating the creation of individual homepages for each public school. Parent opinion was surveyed (as discussed in the previous section), open houses were well attended, and the web page was frequently visited. Aside from these efforts, it is difficult to assess how the community-at-large was affected by the program.

## 9.0 CONTINUOUS IMPROVEMENT ACTIVITIES

Monthly progress meetings held by the Steering Board provided opportunities to review the Technology Infusion Program objectives and progress toward meeting these objectives. Some common topics of discussion that arose during these meetings were (1) activities of the Team during the preceding month, (2) software and hardware technical or administrative difficulties, (3) new software purchases, (4) program staffing needs, (5) staff professional development, (6) new software demonstrations, and (7) additional grant-writing efforts. Based on these discussions, the Steering Board made recommendations for disbursing budget monies for new software, hardware, and professional development activities and followed up on problems identified by the team in providing on-site technology training by prescribing appropriate administrative actions.

## 10. SUMMARY AND CONCLUSION

The Technology Infusion Program was created to provide computer software and hardware training and consulting to teachers and students enrolled in Allegany County public and several private schools. The training focused on teachers assigned to classes in the fourth, seventh, and eleventh grades but teachers from other grades could and did receive training as resources were available. The goals of the program were to provide professional technology support services that improve teacher technology skills, result in curriculum integration of technology, indirectly affect student use/knowledge of technology, and assist student acquisition of knowledge and exercise of problem solving skills in all areas of the curriculum. In this report, the program was evaluated by obtaining evidence that: (1) Training was delivered to the groups identified in the grant in the amounts indicated, (2) Curriculum and training activities emphasized skills that were needed, (3) Training was effective in imparting new computer technology skills to teaching staff, (4) Training activities contributed to increased use of technology in the classroom and curriculum integration, (5) Training activities were associated with increased student use of computer technology, and (6) The community (interpreted in this study to mean primarily 'parents') is satisfied that school technology goals are being realized.

The major finding of the study is that the Technology Infusion Program substantially achieved its goals. Although the team did not deliver the amount or distribution of hours indicated in the grant application, the goals established therein were not realistic given the amount of resources available. Furthermore, there was a tendency to deliver training to those schools whose needs appeared to be greatest as measured by teacher self evaluation surveys. The design of training reflected teacher needs as identified in teacher surveys and subsequent brainstorming by Infusion Team staff but was flexible enough to accommodate teachers from a variety of backgrounds and having various degrees of computer proficiency, from the novice through intermediate levels. Teachers were given a solid orientation concerning the goals of the programs and opportunities for training and gave a high level of approval to these initial sessions. Moreover, they were provided adequate information about the Program through a continuously updated website, literature, monthly newsletter, and technology expositions.

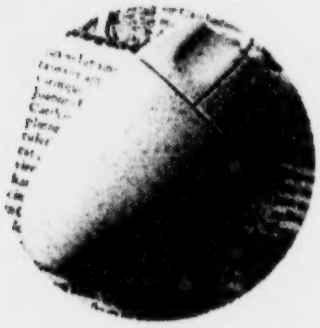
The program appears to have had a measurable effect on teacher computer technology proficiency and student use. Teachers are much more likely to use the Internet than they were three years earlier. Furthermore, teachers who participated in the Technology Infusion Program reported a higher average level of proficiency for all but three software/hardware categories examined. Teachers also reported student gains. Whereas 72% were using computers in school at the beginning of the year, 80% were using them by the middle of the year, and 87% were projected to be using them by the end. In addition, participating teachers were more likely to report that their students were using computers for particular types of learning activities, including "individualized learning," "remediation for basic skills," and "to create graphics or visuals of non-data products."

A large number of parents reported that their children had access to home computers and the Internet. Moreover, many children spent multiple hours each week using software applications for both personal and school purposes. A solid majority (59%) were satisfied with the exposure to technology that their children were receiving at school, and many appeared to be knowledgeable about how often and for what purposes they were using computers in the school setting. In addition, activities such as the Technology Showcase help keep parents informed

of the progress of their children in computer technology and helped build support for school technology initiatives.

Although the project has had an effect on teacher and student computer technology use, the findings here suggest some ways in which the Project might be modified to improve assistance. First, it is important to establish more realistic benchmarks and school contact hour distribution goals at the beginning of the year. More assistance could be offered to the Team to facilitate Infusion efforts in schools where need is high but delivery of training has lagged because of administrative or technical bottlenecks at the school level. Second, as teachers gain increasing proficiency with basic computer operations and first tier productivity applications, it is important that the program devote more resources to identifying tools for integrating technology into the curriculum to support specific learning goals. Third, there may be a benefit to moving the program away from focusing on particular grade levels and instead focus more on the school or (if this proves difficult) the discipline level to better narrow disparities that exist among teachers in levels of computer proficiency. Fourth, it is important at some stage to develop suitable evaluation tools to determine in what ways increased student technology use affects student learning in other areas.

# APPENDIX A.1
# Self-Evaluation Rubrics for Staff Computer Use





BEST COPY AVAILABLE

# Technology Literacy Challenge Grant

## Self-Evaluation Rubrics for Staff Computer Use

## Allegany County Public/Private Schools

## Allegany County, Maryland

## 1999 - 2000

**Please complete this self-evaluation of your own computer skills. There are three purposes for doing this evaluation:**

1. to assist the technology infusion team in providing appropriate assistance for technology integration into curriculum
2. to help you assess your own skills and decide what you need to improve
3. to update data for assessment of our overall progress in use of technology in the district

**Directions:**

***Write the name of the building where you spend the majority of your time.***

_____

***Circle the number which best describes your job assignment :***

| | | | | |
|---|---|---|---|---|
| 01 | Administrator | | 10 | Music |
| 02 | Art | | 11 | Physical Education |
| 03 | Career Education/Business/Tech | | 12 | Physical Plant Staff |
| 04 | Coordinator/Supervisor | | 13 | Primary Teacher |
| 05 | English/Language Arts | | 14 | Science |
| 06 | Foreign Language | | 15 | Secretary |
| 07 | Guidance | | 16 | Social Studies |
| 08 | Math | | 17 | Special Education |
| 09 | Media | | 18 | Upper Elementary Teacher |
| | | | 19 | Other |



BEST COPY AVAILABLE

**Directions:**

**Judge your level for each of the following competencies. Circle the level which best reflects your current level of skill attainment. (Be honest, but kind to yourself). If you feel that you fall into two different levels, choose the lower level. If an item is not relevant to your job description, you do not need to respond to it.**

**You may wish to make a copy of the survey and keep it on file. We will reevaluate technology infusion at the end of the school year.**

## 1. Basic computer operation

**Level 1**
I do not use a computer.

**Level 2**
I can use the computer to run a few specific, pre-loaded programs, but I am sometimes anxious I might damage the machine or its programs.

**Level 3**
I can set-up my computer and peripheral devices, load software, print, and use most of the operating system tools like the scrapbook, clock, notepad, find command, and trash can. I can format a data disk.

**Level 4**
I can run two programs simultaneously, and have several windows open at the same time. I can customize the look and sounds of my computer. I use programs and techniques to maximize my operating system. I teach others some basic operations.

## 2. File management

**Level 1**
I do not save any documents I create using the computer.

**Level 2**
I save documents I've created but I sometimes cannot find where they are saved. I do not back-up files.

**Level 3**
I have a filing system for organizing my files, and can locate files quickly and reliably. I back-up my files to floppy disk on a regular basis.

**Level 4**
I regularly run a disk-optimizer on my hard drive, and use a back-up program to make multiple copies of my files on a weekly basis. I have a system for archiving files which I do not need on a regular basis to conserve hard drive space.



BEST COPY AVAILABLE

## 3. Word processing

**Level 1**
I do not use a word processor, nor can I identify any uses or features it might have which would benefit the way I work.

**Level 2**
I occasionally use the word processor for simple documents which I know I will modify and use again. I generally find it easier to handwrite or type most written work I do.

**Level 3**
I use the word processor for nearly all my written professional work: memos, tests, worksheets, and home communication. I can edit, spell check, and change the format of a document.

**Level 4**
I use the word processor not only for my work, but have used it with students to help them improve their own communication skills.

## 4. Spreadsheet Use

**Level 1**
I do not use a spreadsheet, nor can I identify any uses or features it might have which would benefit the way I work.

**Level 2**
I understand the use of a spreadsheet and can navigate within one. I can create a simple spreadsheet.

**Level 3**
I use a spreadsheet for several applications. These spreadsheets use labels, formulas and cell references. I can change the format of the spreadsheets by changing column widths and text style. I can use the spreadsheet to make a simple graph or chart.

**Level 4**
I use the spreadsheet not only for my work, but have used it with students to help them improve their own data storage and analysis skills.

## 5. Database use

**Level 1**
I do not use a database, nor can I identify any uses or features it might have which would benefit the way I work.

**Level 2**
I understand the use of a database and can locate information within one which has been pre-made. I can add or delete data in a database.

**Level 3**
I use databases. I can create a database from scratch, defining fields and creating layouts. I can sort and print the information in layouts which are useful to me.

**Level 4**
I can use formulas with my database to create summations of numerical data. I can use database information to mail merge in a word processing document. I use the database not only for my work, but have used it with students to help them improve their own data keeping and analysis skills.



BEST COPY AVAILABLE

## 6. Graphics and Multimedia

**Level 1**
I do not use graphics in my word processing or presentations, nor can I identify any uses or features they might have which would benefit the way I work. I have not used a multimedia or CD ROM program.

**Level 2**
I can open and create simple pictures with the painting and drawing programs. I can use programs like *PrintShop* or *Writing Center* which have built-in graphics. I am aware of programs such as *HyperStudio* and *Kid Pix*, but have not used them.

**Level 3**
I use both pre-made clip art and simple original graphics. I can edit clip art, change its size, and place it on a page. I can use most of the drawing tools, and can group and un-group objects. I can create a simple multimedia presentation.

**Level 4**
I can use graphics and the word processor to create documents. I can create a multimedia presentation which includes graphics, color and sound. My students use graphics and multimedia to improve their presentations.

## 7. Network and *cc:Mail* use

**Level 1**
I do not use *cc:Mail* or the Internet, nor can I identify any uses or features they might have which would benefit the way I work.

**Level 2**
I understand that there is a large amount of information available to me as a teacher which can be accessed through networks, including the Internet. With the help of the media specialist or a mentor, I can use resources on the network in our building. I check my *cc:Mail* sometimes.

**Level 3**
I use the network to access professional and personal information from a variety of sources including the World Wide Web. I check my *cc:Mail* regularly.

**Level 4**
Using telecommunications, I am an active participant in on-line discussions and download files and programs from remote computers. I use the World Wide Web with my students and help them become discriminating users of information. *cc:Mail* is an essential communication tool for me, both for internal and Internet e-mail.

## 8. Student Assessment

**Level 1**
I do not use the computer for student assessment.

**Level 2**
I understand that there are ways I can keep track of student progress using the computer. I keep some student-produced materials on the computer, and write evaluations of student work and notes to parents with the word processor. I have tried to use the computer to keep grades or do end-of-year reports, but would like to be more proficient.

**Level 3**
I use an electronic gradebook to keep track of student data (secondary) or I use the district templates for conference and end-of-year reports (elementary). I can tailor these tools to my own grading system or needs.


BEST COPY AVAILABLE

**Level 4**
I rely on the computer to keep track of outcomes and objectives individual students have mastered. I use that information in determining assignments, teaching strategies, and groupings. I keep portfolios of student produced materials on the computer.

## 9. Ethical use understanding

**Level 1**
I am not aware of any ethical issues surrounding computer use.

**Level 2**
I know that some copyright restrictions apply to computer software. I have signed the district Acceptable Use Agreement for use of the network and Internet.

**Level 3**
I clearly understand the difference between freeware, shareware, and commercial software and the fees involved in the use of each. I use only programs for which the district or my building holds a site license. I understand the school board policy on the use of copyrighted materials and the provisions of the district networking agreement. I have a personal philosophy I can articulate regarding the use of technology in education.

**Level 4**
I am aware of other ethical issues involving technology use including equitable access ones. I demonstrate ethical usage of all software and let my students know my personal stand on this issue. I discuss ethical usage issues with my students, including copyright and network use, and insist that they follow policies. My students have Acceptable Use Agreements, signed by their parent/guardian, on file.

## 10. Curriculum integration

**Level 1**
I do not see a need to use computer technology in my teaching area.

**Level 2**
I have identified one or two pieces of software or CD ROMs that I sometimes use with students.

**Level 3**
I am familiar with a variety of instructional software and CD ROMs and use them frequently in my teaching. I have chosen software that is directly related to my curriculum and integrate it with other instruction. The software I have identified has been reviewed and is on the approved software list.

**Level 4**
I use the computer for instruction on a daily basis. I make use of a computer for teaching in my classroom. I schedule my students to use the computer lab in our building. I have identified software for both whole group instruction and individual use.

***List below areas you would especially like to receive training on during the September New Teacher Technology Sessions:***

*Modified from "Self-Evaluation Rubrics for Teacher Computer Use" developed by Doug Johnson, District Media Supervisor, Mankato, MN, Public Schools. Also from the book "The Indispensable Librarian", Linworth Publishing, 1997, by Doug Johnson.*

*Adapted from Iowa City Community School District*

BEST COPY AVAILABLE

# APPENDIX A.2
# Technology Infusion Brochure.

BEST COPY AVAILABLE

## *WEBQUESTS*

***WebQuests*** are on-line performance tasks utilizing technology as a tool to promote MSPAP outcomes and indicators.

***WebQuests*** are grade and content specific. Students research using safe Internet links to access global information as a resource in their problem solving.

Scoring tools or rubrics are included to assist teachers in grading these activities.

**Connecting students in Allegany County to the world.**



**ACPS**

**Allegany County Public Schools**

**1999-2000**

*Welcome to*
*Allegany County Public Schools*
*of* **MARYLAND**

***Preparing students in Allegany County for the 21st century***
***Designed by: Marsha H. Miller***

The Board of Education of Allegany County is an equal opportunity employer and does not discriminate on the basis of race, color, sex, age, national origin, religion or disability in matters affecting employment or the provision of service, programs or activities in compliance with the Americans with Disabilities Act of 1990, Section 504 of the Rehabilitation Act of 1973 and the Individuals with Disabilities Education Act.

**AN EQUAL OPPORTUNITY EMPLOYER**

BEST COPY AVAILABLE

**Allegany County Public Schools**

**1999-2000**

# *Technology Infusion*

*Technology Literacy Challenge Grant*

Using technology as a tool to support curriculum for student achievement

# *Technology Infusion*

The Technology Literacy Challenge Grant awarded to Allegany County Public Schools for the 1999-2000 school year provides the opportunity for teachers and students to use technology as a tool to support curriculum.

Using Technology as a tool, students solve problems and investigate research.

Contact the ***Technology Infusion Specialists***


Voice: 301-784-5101

FAX: 301-784-5025

E-mail:

Marsha H. Miller: mmiller@allconet.org

John D. Close: jclose@allconet.org

Rick Metheny: rmetheny@allconet.org


Web address:

www.infusion.allconet.org



## County Approved Curriculum Software

**Cornerstone and SkillsBank** – Comprehensive courseware package is for students in grades 3 – 8 and addresses basic skills in Language Arts, Math, Reading Vocabulary, and Reading Comprehension.

**Logal** – Science and Math interactive education is online for middle and high school students. Simulation activities that differ by content, content level, and design integrate technology in the classroom.

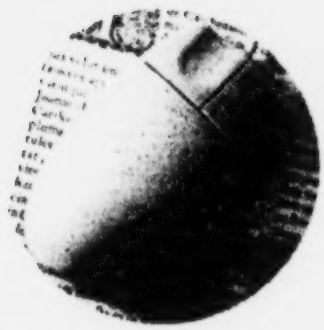
## Productivity Software

Microsoft Office, ClarisWorks, Excel, and PowerPoint offer teachers and students the ability to create finished products by using and connecting various software programs.

## Connectivity Tools

Internet, e-mail, scanners, and digital cameras provide tools to globally connect teachers and students with an abundance of information.

# APPENDIX A.3
# Technology Expo Brochures.



BEST COPY AVAILABLE

## Technology Management Council Members

* * *

JC Armstrong
William AuMiller
Deborah Bittinger
Jeffrey Blank
Karen Bundy
Terri Crawford
Susan Davis
Gary Delaney
Robert Hall
Ernest Kaylor
David Kehres
Julie Kirby
Timothy Martin
Michael McGowan
Tom Melvin
Marsha Miller
Vincent Montana
Robert Noel
Jerry Ray
Doug Schwab
Dennis Shankle
James Stevenson
Beth Thomas
Robert Wempe


**Sponsored by:**
Technology Management Council
Allegany County Public Schools
108 Washington Street
Cumberland, MD 21502
#301-729-2071
E-mail - dshankle@allcoast.org (Dennis M. Shankle)

Together.....
We can make a difference
for the children.


The Board of Education of Allegany County is an equal opportunity employer and does not discriminate on the basis of race, color, sex, age, national origin, religion or disability in matters affecting employment or the provision of service, programs or activities in compliance with the American with Disability Act of 1990, Section 504 of the Rehabilitation Act of 1973 and Individuals with Disabilities Education Act. An Equal Opportunity Employer.


Third Annual

# Technology in the Marketplace

**September 23, 1999**
**1:30 pm - 3:30 pm**

## Allegany College of Maryland

**Continuing Education Buildin**
**Rooms 12 – 14**

**Technology Management Counci**
**Allegany County Public School**


BEST COPY AVAILABLE

# Program

**Purpose:** to gain insight and input regarding technology skills students are learning, infusion teachers are delivering, and sharing our progress.

## *Welcome*

**Dr. Gene Hall**
Vice-President for Instructional Affairs
Allegany College of Maryland

## *Technology Update*

**Dennis M. Shankle,** Chairperson
Technology Management Council
**Dr. Ernest Kaylor**
Supervisor of Instructional Technology

## *Student Technology Skills and Demonstrations*

**Allegany High School**
Mark Hemingway
Scott Whetsell
Dustin Winter

**Beall Jr/Sr High School**
Justin Andrews
J.C. Armstrong
Jason Shaw

**Mount Savage School**
Jesse Matthews

**Parkside Elementary School**
Melissa Stine
Nicole Jenkins

**Washington Middle School**
Betty Bass
Katie Eberly
Garrett Hidey
Brittany Jones
Alex Ziler

**West Side Elementary School**
Erin Boyce
Rachel Cook
Heather Emerick
Mathew Hare
Megan McCray
Zachary McNemar
Laura Strickler

## *Technology Infusion*

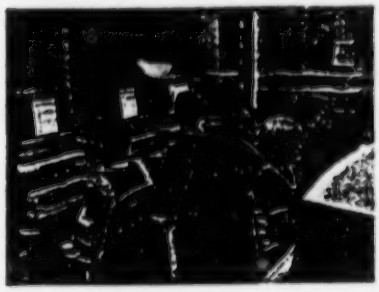
**Karen Bundy**
Director of Secondary Education
**Helen Ann Warnick**
Director of Elementary Education

## *Infusion Specialists*

**Mr. John Close**
**Ms. Marsha Miller**
**Mr. Rick Metheny**

## *Questions & Answers*

**Dennis M. Shankle**



Hosted by:
Allegany College of Maryland

Refreshments served by:
Allegany County Farm Bureau Member

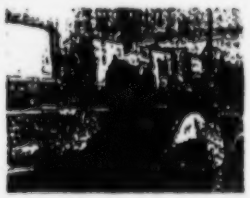
"Menu"
Ice Cream
Coffee/Tea

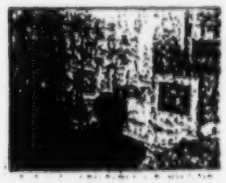
# Technology Showcase 2000

Technology

In

Our





Schools

presented by

Allegany County Public Schools'
Technology Infusion Office
and
Allegany College of Maryland



*The Office of Technology Infusion would like to thank the participating schools for sharing their sucesses with the use of technology.*

**Allegany High School**
**Barton Elementary**
**Beall Elementary**
**Beall High School**
**Bel Air Elementary**
**Braddock Middle School**
**Calvary Christian Academy**
**Center for Career & Technical Education**
**Cresaptown Elementary**
**Frost Elementary**
**Northeast Elementary**
**Parkside Elementary**
**St. John Neumann School**
**St. Michael's School**
**Washington Middle School**
**Westernport Elementary**
**Westmar High School**

**The Prokoyotes and The Protists**
Tim Dinan & Janjua Osman
Allegany High

**Reflections On The Silver Screen**
Matt Loff & Aaron Lapp
Allegany High

**Business Education Pathways**
Doug Van Hollen & Scott Wetzel
Allegany High

**Journals**
Lee Beeman & Sarah Benson
Barton Elementary

**Fairy Tale Web Quest**
Tanya McCusker, Nick Schrug, Brandon Twigg, & Katie Wallace
Beall Elementary

**Linking School and Community**
Justin Andrews, JC Armstrong, Rachael Armstrong, Keirsten LaRue & Jason Shaw
Beall Junior / Senior High

**Technology and The Chronicles of Narnia**
Deshaies Kelsey & Carolyn Waugaman
Bel Air Elementary

**Ferdinand's Fantastic Find**
Cassie Thompson
Bel Air Elementary

**A Showcase of Elements**
Meredith Berry, Daniel Hull, Adena Leibman, & Jacob Matthews
Braddock Middle School

**Web Page Design**
Dustin Iser & Adam Zinn
Calvary Christian Academy

**Web Conferencing**
John Apple
Center For Career & Technical Education

**Job Interview**
Chrissy Bowers
Center For Career & Technical Education

**Web Site Construction**
Ashley Hamm
Center For Career & Technical Education

**C D Year Book**
Brian Lapp
Center For Career & Technical Education

**State Portfolio – Texas**
Destine Hamilton
Cresaptown Elementary

**Integrating Guided Reading**
Sam Hofacker
Creasptown Elementary

**Book Report**
Brannon Wray
Cresaptown Elementary

**Earth Week – 2000**
Brian Anderson & Derek Dye
Frost Elementary

**Black History Reports**
Jessica Diggs, Matthew Johnson, & Kylie Waugeman
Northeast Elementary

**Multimedia Book Report**
Raashi Kulkarni
Parkside Elementary

**Geometry Jeopardy**
Justin Zimmerman
Parkside Elementary

**Inventors That Changed The World**
Chris Anderson, Erin Becker, Jean Chapman, Samut Gupta, Jherdon Lashley, Annie Malone, Hannah Sagin, Leah Scarpelli, Jordan Stanley, & Austin Parsons
St. John Neumann

**Computer Generated Art**
Bradley Class, Anna Duesberry, John Groetzinger, Amy Ree, Payne Turner, & Julia Roberts
St. John Neumann

**Technology**
Jonathan Logsdon & Josh Plummer
St. Michael's School

**In My Father's House**
Kelly Blake & Mary Wempe
Washington Middle School

**The Computerized Library**
Samuel Bracket
Westernport Elementary

**Social Studies Power Point**
Eric Morris
Westernport Elementary

**Bridging The Gap**
Jennifer Barb, Erin Laffey, Lee McElvie, Amel Morris, Terry Steele, & Jason Wampler
Westmar High

**Software Sampler**
Office of Technology Infusion



BEST COPY AVAILABLE

## Technoloy showcase

Students at the Center for Career and Technical Education recently participated in the Technology Showcase at Allegany College. Chrissy Bowers, a student in the computer information technology skill area, presented a Powerpoint slide show on "The Perfect Guide for Preparing for a Job Interview." Brian Lapp, a personal computer repair technology student, presented the CD Yearbook, which PC repair technology students are selling for the first time this year. John Apple, a broadcast technology student, displayed video conferencing. Pictured, from left, are Kelly Stanislawczyk, computer information technology teacher; Bowers, Lapp, Apple, and Tom Krukowsky, broadcast technology teacher.

BEST COPY AVAILABLE

# APPENDIX A.4
## *Computer Bytes* Newsletter.

ALLEGANY COUNTY PUBLIC SCHOOLS
TECHNOLOGY INFUSION
Vol. 1 May / June 2000 No. 5

*Ask Not What Computers Can Do With Students But What Students Can Do With Computers*

# COMPUTER BYTES

## Maryland Satellite Academy Program: Mountain Maryland

The grant for the local summer technology workshop has been conditionally recommended for funding by the Maryland State Department of Education. The program is designed to help teachers integrate various uses of technology in their classrooms. It will be held at Allegany College of Maryland the first week in July and the week of August 14th. Advance notice was sent to all of the eligible public schools in February and 43 public school teachers expressed an interest in the summer workshop. There are only 20 openings available for the workshop. Applications are being sent to all of the interested teachers. They will be reviewed by the Infusion Staff and the successful applicants will be notified.

BEST COPY AVAILABLE

**Index**

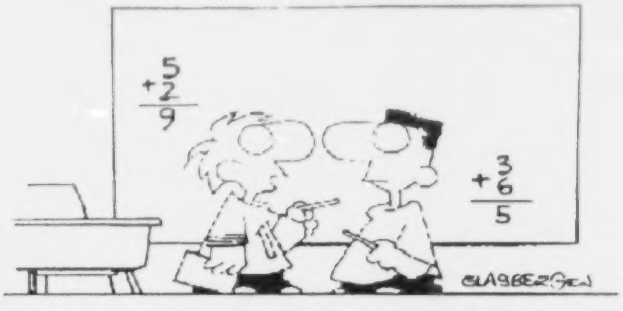
Page One:
Technology Infusion
Page Two:
BEST PRACTICES
Page Three:
AROUND THE COUNTY
Page Four:
Featured Software of the Month

## Technology Infusion

This year the Technology Infusion Staff has been active in the public and private schools of Allegany County. The infusion specialists have spent over 1200 hours working with small groups, whole school staffs, and individual teachers. The Infusion Web site has been accessed 1870 times since the counter was added in the middle of April. It is hoped that we have been able to help the teachers make the integration of technology easier. At the present time the Challenge Grant application has been submitted for the school year 2000/2001. If it is funded, we will be able to continue the Technology Infusion program for the next school year.

## A Thought For The Summer

With this school year drawing to a close the Technology Infusion Specialists would like to thank all of you for your cooperation during the year. We hope that some of the things we shared have been of help to you. We would like to leave you with this message from the students we all work with.




**"My lawyer says I can sue the school because they're violating my right to be stupid."**



BEST COPY AVAILABLE

# Best Practices

## Cresaptown First Graders Use Power Point to Show Flat Stanley's Adventures

Many students are creating Power Point presentations but it's not too that the students are only six years old. However, a first grade class at ptown has proven that technology has few limitations.

Mrs. Kari Brown's first grade students read the book Flat Stanley by Brown. The book was about a boy who was flattened by the chalkboard on him and his adventures after becoming flat.

The students then created their own Flat Stanley's and mailed them to people throughout the country. Those that received a Flat Stanley asked to take him on an adventure and send a letter back to the class ibing his adventure or to send a postcard to show where he had been.

The students created Power Point slides to show where their Flat went, who he saw, and who he met. Some of the first grade students been trained in the use of Power Point in an after-school program and ers were trained by the Tech. Infusion Teachers and Mrs. Brown.



BEST COPY AVAILABLE

## MSPAP

Yes, it s that time of year again. The flowers are blooming, birds are singing, and MSPAP is looming on the horizon. While you are in the midst of your fevered preparations for the tests, remember that part of the activities will include information about **Bears.** If you are looking for background information about these large mammals you might turn to the infusion home page. Under Other Good Web Sites Science there is an excellent website called the Bear Den. This website contains information about bears presented in formats for all ages.

## Rock Climbing

Ms Carole Ryan's Earth Science class at Fort Hill visited Cooper's Rock for some rock climbing as part of their study about mountain formation and the rock cycle. As a culminating activity the students were preparing a Power Point presentation about mountains and the rock cycle that had to contain some of the pictures from the Cooper's Rock fieldtrip. The pictures were scanned onto 3.5 floppy disks and inserted by the students into their presentations.

All Around Allegany County

### On-line Teacher Resources

GOTSchool Teachers allows teachers to find and review educational resources, align these resources to relevant standards, and share ideas, creating dialogue to improve student and teacher achievement. The website combines a robust search engine and database with a simple look and feel, allowing educators to find materials easily and add their reviews of them to the GOTSchool Teachers database. >www.gotschool.com<

Teachervision is another great site for teachers. Lesson Plans are the core of any teacher's professional life. Teachervision.com has organized Lesson Plan links by curriculum areas. They have included grade level suitability and descriptions of the sites. If you are looking for a particular topic for a lesson plan and cannot find what you need, contact them. They will do the searching for you and email the information to you and post it on their site for other teachers. >www.teachervision.com<

## Ninth Grade Allegany Students Have "Great Expectations"

Technology is being used in schools throughout the county and has now found its way into the 9th grade English curriculum. The students in Ms Lori Brown's 9th grade English class at Allegany High School have been reading and studying Great Expectations by Charles Dickens. As they proceeded through their unit, they were introduced to an on-line Web Quest dedicated to the study of this book. The students utilized the PC lab in the Media Center and worked through one of the tasks presented in the Web Quest. Throughout their time on the computers, they had to proceed to specified web sites, research the material at those sites, and then apply it to the task they were given. The Web Quest included the scoring rubric that would be used to assess the individual projects so they knew exactly what Ms Brown would be looking for when grading them. It was an excellent example of how literature, research and technology skills can all work together to enhance the classroom curriculum.

## Fine Arts Homepage

A web site has been established that will enable the creative arts teachers from around the county to display their student's work on-line. It will also provide a location for all news and announcements relating to the arts in our schools.



BEST COPY AVAILABLE

# Featured Software

### Silver Burdett / Ginn Homepage

This site is bookmarked on the Infusion homepage under Other Good Web Sites-Social Studies. It contains links to Math, Reading, and Social Studies activities. These links provide several excellent reinforcement activities that are written to be used with the Silver Burdett books but are good lessons in their own right. They contain the objectives, goals, printable worksheets, answer keys, and step by step teacher instructions on how to teach the lessons. All of the activities are listed by grade level divisions from Kindergarten to Middle School. One example from the Social Studies section asks the students to write a letter from a Civil War soldier to his family at home. As part of the resources the students are introduced to a real Civil War veteran and are given an opportunity to read the letters that he wrote to his fiancée in Ohio. The site not only contains the letters but also the service record of the soldier and the obituaries of both him and the lady he wrote to. She became his wife after the war.

### Teaching Ideas for Primary Grades

There is a UK website that has some good ideas for primary teachers. This site contains quick and easy to use lessons for children ages 5 to 11. There are Language Arts, Math , Science, Geography, Art, Music, and P.E. lesson resources. The URL is **http://www.teachingideas.co.uk/.**

### Book Adventure.com

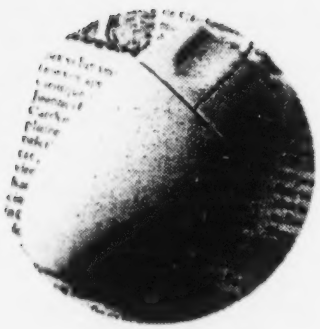
If you are presently using the accelerated reader material and would like to have your students continue a similar activity during the summer months this software is for you. This program is set up like the accelerated reader program. It allows parents to register their students and certify that the students have read the book and worked the tests by themselves. The students can accumulate points that are redeemed for on-line prizes. Most of these prizes are in the form of coupons for money off purchases at various stores. This site is bookmarked on the infusion home page under Other Good Websites – Language Arts.

Copyright 1997 Randy Glasbergen. www.glasbergen.com

**"I forgot to make a back-up copy of my brain, so everything I learned last semester was lost."**

BEST COPY AVAILABLE

# APPENDIX A.5
# Infusion Specialists Web Site.





BEST COPY AVAILABLE

Home | Job Entry | View Jobs | School Report | Schedule | Request | View Reque

WELCOME TO THE INFUSION SPECIALISTS WEB SITE

**This site was created to help the Infusion Specialist track their progress in the schools, as well as to provide a means of communication between the specialists and the school personnel.**

## *Contacts*

**Jill Keating:** jkeating@allconet.org
**Bob Stevenson:** bstevenson@allconet.org
**John Close:** jclose@allconet.org

## *Location*

**Allegany College of Maryland**
**12401 Willowbrook Rd, SE CE33**
**Cumberland, MD 21502**
**Phone: 301-784-5101**
**Fax: 301-784-5025**

Visit these other sites:

WebQuest-High

WebQuest-Middle

WebQuest-Elementary

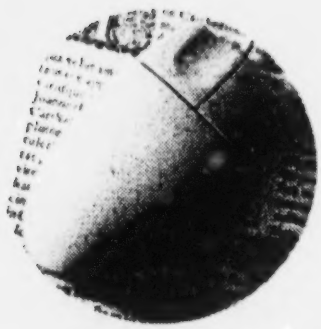
Other Good Web Sites

Computer Bytes - Monthly Newsletter

**Please report problems with the web site here.**

BEST COPY AVAILABLE

# APPENDIX A.6
# Web-site Tracking Report.





BEST COPY AVAILABLE

**Current Page Access Statistics For WebTracker Member:** R38444-00

| **WebTracker** at **www.FXWeb.com** | **Total Page Accesses:** | 2081 |
|---|---|---|
| | Statistics started on Thu Mar 30 11:22:40 2000 EST | |
| | Days in Operation | 47.9 |
| | Average Hits per Day: 43 | **Ranking:** (N/A) |

eAds **Invalid Account:** Please recheck your html or contact eAds Technical Support.
Thanks, eAds

## Browsers Reaching Your Site

| | | | |
|---|---|---|---|
| Netscape 3 | 65 | | 3% |
| Netscape 4 | 972 | | 47% |
| MSIE 2 | 2 | | 0% |
| MSIE 3 | 11 | | 1% |
| MSIE 4 | 717. | | 34% |
| Unknown | 3 | | 0% |

## Return Visitor Percentages (determined by Persistent Cookies)

| | | | |
|---|---|---|---|
| One Time | 100% | 4-7 Times | 0 |
| 2-3 Times | 0% | 8+ Times | 0 |

## Domain Hit Percentages

| | | | | | |
|---|---|---|---|---|---|
| .com | 42 | 2% | .net | 53 | 3% |
| .edu | 8 | 0% | .org | 0 | 0% |
| .gov | 4 | 0% | .us | 66 | 3% |
| .uk | 0 | 0% | .ca | 0 | 0% |
| .de | 0 | 0% | .se | 0 | 0% |
| .au | 1 | 0% | .jp | 0 | 0% |
| .no | 0 | 0% | .fr | 0 | 0% |
| .nl | 0 | 0% | .dk | 0 | 0% |
| .tw | 0 | 0% | Other | 1 | 0% |

* 92% of hosts were not reported (1906 total)

BEST COPY AVAILABLE

| Hits by Operating System | | |
|---|---|---|
| Windows 98 | 15% | ▪ |
| Windows 95 | 26% | ▪ |
| Windows NT | 30% | ▪ |
| Macintosh | 28% | ▪ |
| WebTV | 0% | ▪ |

* 0% of operating systems were not tracked (2 total)

| Hits by Day of the week | | |
|---|---|---|
| Monday: 254 | 12% | ▪ |
| Tuesday: 437 | 21% | ▪ |
| Wednesday: 475 | 23% | ▪ |
| Thursday: 484 | 23% | ▪ |
| Friday: 372 | 18% | ▪ |
| Saturday: 37 | 2% | ▪ |
| Sunday: 22 | 1% | ▪ |

**Hits by hour of day**

| 1% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 4% | 15% | 9% | 13% | 12% | 14% | 11% | 8% | 3% | 3% | 1% | 1% | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 1 |

**Morning (AM)** **Night (PM)**

fxweb.com WebTracker **WebTracker is a free service from FXWeb Web Technologies**
We listen to your comments! Send mail to

# APPENDIX A.7
# Technology Use Survey

BEST COPY AVAILABLE

January 4, 2000

Dear School Principal:

We would like to request your assistance in an assessment that we are conducting of the Technology Literacy Challenge Grant which has provided your teachers with computer hardware and software training during the current school year. This assessment is being done by Allegany College in cooperation with the Allegany County Board of Education and will provide information that is used in benchmarking the technology skills of students and teachers, evaluating the effectiveness of the Technology Infusion Program, and determining areas for additional follow-up by Technology Infusion staff.

We hope that you will distribute the enclosed surveys to each of your teachers and staff during the next week and return them to Mr. John Close, the Technology Infusion coordinator, before February 15, 2000. If you need additional questionnaires, please contact John (301. 784-5101) or myself ((301) 784-5207) at any time. Please be assured that the responses to this survey will be kept strictly confidential.

I appreciate your assistance and consideration. If you have any additional questions, please contact me at the phone number listed above. Thank you.

Sincerely,

Dr. Terance J. Rephann
Director of Institutional Research

Enclosure



301-784-5000

ALLEGANY COLLEGE OF MARYLAND • 12401 WILLOWBROOK ROAD, SE • CUMBERLAND, MARYLAND 21502-2594

http://www.ac.cc.md.us

BEST COPY AVAILABLE

# TECHNOLOGY USE SURVEY

This survey is being used to assess faculty and student use of computer technologies in the classroom and to evaluate the effectiveness of the Technology Infusion Program. Please answer the following 10 questions to the best of your ability and return the questionnaire to your school principal. Thank you.

1. **What grade levels do you teach?**
   ***(Please check all that apply)***

| | |
|---|---|
| ❒ Pre-K | ❒ 6 |
| ❒ K | ❒ 7 |
| ❒ 1 | ❒ 8 |
| ❒ 2 | ❒ 9 |
| ❒ 3 | ❒ 10 |
| ❒ 4 | ❒ 11 |
| ❒ 5 | ❒ 12 |

2. **What subject areas do you teach?**

- ❒ Elementary education *(all subjects combined)*
- ❒ Science
- ❒ Mathematics
- ❒ English/Language Arts
- ❒ Social Studies
- ❒ Fine Arts
- ❒ Second Languages
- ❒ Health
- ❒ Physical Education
- ❒ Computers
- ❒ Vocational education
- ❒ Special education
- ❒ Other

3. **Where do you teach?**

- ❒ Allegany
- ❒ Alternative School
- ❒ Barton Elementary
- ❒ Beall Elementary
- ❒ Beall Jr./Sr. High
- ❒ Bel Air Elementary
- ❒ Bishop Walsh
- ❒ Braddock Middle
- ❒ Calvary Christian
- ❒ Career Center
- ❒ Cash Valley
- ❒ Cresaptown Elementary
- ❒ Flintstone K-12
- ❒ Fort Hill High
- ❒ Frost Elementary
- ❒ George's Creek Elementary
- ❒ John Humbird Elementary
- ❒ Mount Savage K-12
- ❒ New Dominion
- ❒ Northeast Elementary
- ❒ Oldtown K-12
- ❒ Parkside Elementary
- ❒ South Penn Elementary
- ❒ St. John Neumann
- ❒ St. Michael's
- ❒ St. Peter's
- ❒ Washington Middle
- ❒ Westmar High
- ❒ Westmar Middle
- ❒ West Side Elementary
- ❒ Westernport Elementary
- ❒ Other (Please describe _____)

4. **Have you received any professional development in the use of technology during the current school year (1999-2000)?**

| | | |
|---|---|---|
| Technology Infusion Training | ❒ Yes | ❒ No |
| School-Based Workshops | ❒ Yes | ❒ No |
| Classes at Allegany College | ❒ Yes | ❒ No |

5. Please indicate your awareness/use of the following computer-based technologies (4=Use frequently, 3=Use occasionally, 2=Do not use, 1=Never heard of)

| | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| **PRODUCTIVITY TOOLS** | | | | |
| Word processing | ❒ | ❒ | ❒ | ❒ |
| Spreadsheets | ❒ | ❒ | ❒ | ❒ |
| Database | ❒ | ❒ | ❒ | ❒ |
| Graphics | ❒ | ❒ | ❒ | ❒ |
| Electronic presentations | ❒ | ❒ | ❒ | ❒ |
| **CURRICULUM SOFTWARE** | | | | |
| Computer Aided Instruction (Simulation/educational games) | ❒ | ❒ | ❒ | ❒ |
| Skillsbank | ❒ | ❒ | ❒ | ❒ |
| Cornerstone | ❒ | ❒ | ❒ | ❒ |
| Logal | ❒ | ❒ | ❒ | ❒ |
| **INTERNET** | | | | |
| World Wide Web | ❒ | ❒ | ❒ | ❒ |
| e-mail | ❒ | ❒ | ❒ | ❒ |
| Web page design | ❒ | ❒ | ❒ | ❒ |
| Search engines | ❒ | ❒ | ❒ | ❒ |
| Webquests | ❒ | ❒ | ❒ | ❒ |
| **HARDWARE** | | | | |
| Digital camera | ❒ | ❒ | ❒ | ❒ |
| Scanners | ❒ | ❒ | ❒ | ❒ |
| LCD Panel or computer projector | ❒ | ❒ | ❒ | ❒ |
| Other (please describe: _____) | ❒ | ❒ | ❒ | ❒ |

6. Approximately how many students do you teach? _____

7. Please estimate the percentage of your students that have used, are using, or are likely to use computers in school for purposes listed below at the beginning of the school year (September 10, 1999), now (January 15, 2000), and by the end of the school year (June 9, 2000).

| | Sept. 10, 1999 | Now | June 9, 2000 |
|---|---|---|---|
| Computers in general | ___% | ___% | ___% |
| Productivity software (spreadsheets, databases, graphics, presentations) | ___% | ___% | ___% |
| Curriculum software | ___% | ___% | ___% |
| Any Internet activity | ___% | ___% | ___% |

8. What percentage of your students use computers in the following manner for your classes?

| | |
|---|---|
| to organize and store information | ___% |
| to collect data and perform measurements | ___% |
| to manipulate/analyze/interpret data | ___% |
| to create visual displays of data/information (e.g., graphs, charts, maps) | ___% |
| to plan, draft, proofread, revise, and publish written text | ___% |
| to create graphics or visuals of non-data products (e.g., diagrams, pictures, figures) | ___% |
| to create visual presentations | ___% |
| to perform calculations | ___% |
| to create models or simulations | ___% |
| to support individualized learning | ___% |
| for remediation for basic skills | ___% |
| to compensate for a disability or limitation | ___% |
| other (please describe _____) | ___% |

9. Would you like to share any other information concerning how you have made use of technology in the classroom during the past school year?

_____

_____

_____

10. If you have a lesson plan that illustrates "technology in support of the learning environment," please attach a copy to this survey. *Thank you.*

# APPENDIX A.8
# Contact Evaluation

VOICE
301-784-5101

Allegany County Public Schools
Center for Technology Infusion

FAX
301-784-5025

# Technology Infusion Contact Evaluation

**Contact Data:**

Date:_____

Time: _____

Location: _____

Group: _____

**Contact Purpose:**_____

## Evaluation

**In an effort to better meet the technology needs of the school community, the technology infusion staff appreciates your taking time to complete this post contact evaluation.**

**Evaluation Rubric**

**5 = Strongly Agree / 4 = Agree / 3 = Mostly Agree / 2 = Mostly Disagree**

**1 = Strongly Disagree**

**Please darken the space beside the appropriate number.**

- The presentation met my individual technology needs at this time.

O 5 O4 O3 O2 O1

- The presentation has shown me a way to incorporate the use of technology in my classroom.

O 5 O4 O3 O2 O1

- The presentation met my expectations.

O 5 O4 O3 O2 O1

- The main purpose of the presentation was clearly stated.

O 5 O4 O3 O2 O1

- The information presented is appropriate for my individual needs.

O 5 O4 O3 O2 O1

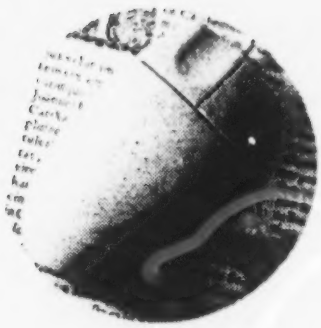
- The presenter was well informed and helpful.

O 5 O4 O3 O2 O1

**Additional Comments**: (To better serve you,the Technology Infusion Staff appreciates your input)

mmiller@allconet.org / jclose@allconet.org / rmetheny@allconet.org

# APPENDIX A.9
# Sample lesson plans.



# Unit Cover Page

Unit Title: Human Genetics Grade Level(s): 11-12

Subject/Topic Area(s): Advanced & AP Biology

Key Words: Genetics, Human Genome

Designed By: Gene Pustolski Time Frame: 3-4 weeks

School District: Allegany County School: Fort Hill High School

Link to Content Standards:

Core Learning Goals 3.3.1

3.3.2

3.3.3

3.3.4

Brief Summary of Unit (including curricular context and unit goals):

Present a brief overview of human genetics.

Students research a selected or assigned illness, disease or terminal condition and identify how it relates to human genetics.

Students must make reference to the human genome project.

Presentations will be made using power point.

This unit design packet includes:

- ☒ *completed Template pages - Stage 1, 2, and 3*
- ☒ *completed Blueprint for each performance task*
- ☒ *completed Blueprint for Other Evidence*
- ☒ *directions to students & teachers*
- ☒ *materials & resources listed*
- ☐ *suggested accommodations*
- ☐ *suggested extensions*

Status: ☒ *initial draft (date - 8/17/2000 )* ○ *revised draft (date - _____ )*

○ *peer reviewed* ○ *content reviewed* ○ *field tested* ○ *validated* ○ *anchored*

©1998 Grant Wiggins and Jay McTighe

## Stage 1: Identify desired results.

What enduring understandings are desired?

*Students will understand:* (a)

Genetics –gene function & structure, replication, transcription & translation.

Human Genome Project –history and purpose.

illnesses–genetic and project connections.

What essential questions will guide this unit and focus teaching/learning?

(b)

Genetics – The Human Genome Project

What is it?

Project purpose?

Project outcomes associated to illnesses and diseases?

What key knowledge and skills will students acquire as a result of this unit?

*Students will know:* (c)

- molecular genetics.
- the human genome project.
- how the human genome project may discover the genetic identity of illnesses and diseases.

*Students will be able to:*

...link genetics to various illnessesand diseases through the human genome project.

...utilize various resources to research genetic topics.

©1998 Grant Wiggins and Jay McTighe

## Stage 2: Determine acceptable evidence.

What evidence will show that students understand?

Performance Tasks*:

d

1. Student will research and develop a power point presentation on a selected (or assigned) illness, disease or terminal condition linking it to human genetics.
   Student must make reference to the human genome project.
2.
3.

*Complete a Performance Task Blueprint for each task (next page).

*Other Evidence***

Quizzes, Tests, Prompts, Work Samples (summarized):

e

Test: Molecular genetics

Prompt: What are some of the philosophical remifications of your research?
In other words, how will this influence society in the future?

Unprompted Evidence: *(observations, dialogues, etc.)*

f

Informed observations & discussions during class while working on projects.

Student Self-Assessment:

g

Self-assess research.

Self-assess project using multimedia project rubric.

**Use the Blueprint for Other Evidence to describe assessments other than performance tasks.

©1998 Grant Wiggins and Jay McTighe

# Performance Task Blueprint

d

Task Title: Human Genetics Links to the Human Genome Project Approximate time frame: 5 – 6 days

What desired understandings/content standards will be assessed through this task?

| | | |
|---|---|---|
| Molecular genetics | Human genome project | |

What is the purpose of this assessment task? ○ *formative* ⊗ *summative*

Through what authentic performance task will students demonstrate understanding?

*Task Overview (include G.R.A.S.P.S. - goal, role, audience, scenario, purpose, and standards):*

Student will select or be assigned an illness, disease or terminal condition from a list.

Research topic using a minimum of three resources. This includes internet and physical resources.

Develop a power point presentation

Time limit: 5 to 10 minutes

Number of slides: minimum 10 slides

Order of format: Introduction – Name and illness researched

Description of illness

illness link to human genetics

Current fidings regarding the illness from the human genome project

Resources used.

What student products/performances will provide evidence of desired understandings?

| | | |
|---|---|---|
| Power point project & presentation. | | |

By what criteria will student products/performances be evaluated?

| | | |
|---|---|---|
| • Preliminary work | • | • |
| • Design | • | • |
| • Content | • | • |
| • Presentation | • | • |

What type of scoring tools will be used for evaluation? • *Use a separate sheet for scoring tools*

○ *analytic rubric* ⊗ *holistic rubric* ○ *criterion (performance) list* ○ *checklist*

# Blueprint for Other Evidence

What other assessment evidence will be collected during this unit? e f g

**What will be assessed?**

⊗ knowledge ○ skill ○ understanding

list: _____

**How will evidence be collected?**

⊗ quiz/test ○ assignment ○ teacher notes

**What type of assessment will be used?**

⊗ selected response ○ academic prompt

○ brief constructed response ○ observation

○ work sample ○ other: _____

**What is the assessment's purpose?**

○ diagnostic ⊗ formative ○ summative

*Describe the assessment and/or state the prompt.*

Series of SR statements evaluating molecular genetics.

**What will be assessed?**

○ knowledge ○ skill ⊗ understanding

list: _____

**How will evidence be collected?**

○ quiz/test ⊗ assignment ○ teacher notes

**What type of assessment will be used?**

○ selected response ⊗ academic prompt

○ brief constructed response ○ observation

○ work sample ○ other: _____

**What is the assessment's purpose?**

○ diagnostic ○ formative ⊗ summative

*Describe the assessment and/or state the prompt.*

What are some of the philosophical ramifications of the research?

In other words, how will this influence society in the future?

By what criteria will student responses be evaluated? (Complete if applicable.)

- Correct answers.
- _____
- _____
- _____
- _____

- Multimedia project rubric.
- _____
- _____
- _____
- _____

What type of scoring tools will be used for evaluation? (Check if applicable.)

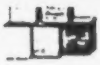
○ analytic rubric ○ holistic rubric

○ criterion list ○ checklist ⊗ answer key

○ analytic rubric ⊗ holistic rubric

○ criterion list ○ checklist ○ answer key

BEST COPY AVAILABLE



What sequence of teaching and learning experiences will equip students to develop and demonstrate the desired understandings?

Consider the W.H.E.R.E. elements, from the *student's* perspective.

h

- W – Present description of the performance tasks early in the unit along with the multimedia scoring rubric.
- Post essential questions on the black board.
- H – Begin unit with easy identifiable genetic features:
  --tongue rolling, ear lobes, touch nose with tongue, wigle ears.
- Why do some people have theses traits and others do not?
- E – Student will research & develop a power point presentation on a selected illness, disease or terminal condition and how it is linked to human genetics.
- Student must make reference to the human genome project.
- R – Research genetic and human genome project.
  Reflect on conclusion questions.
- E – The completed project and presentation will provide evidence of understanding.
  Student will self evaluate their project using the multimedia project rubric.

# Unit Cover Page

Unit Title: UV RAYS AND SKIN CANCER Grade Level(s): 6
UV or NOT UV

Subject/Topic Area(s): HEALTH - CANCER UNIT
EFFECTS of UV RAYS - SKIN CANCER

Key Words: ~~ULTRAVIOLET RAYS, OZONE, MELANOMA, BASAL CELLS,~~ SQUAMOUS CELLS, CHEMOTHERAPY

Designed By: ~~ELIZABETH SIMPSON~~ Time Frame: ~~UNIT - 3 WKS~~ THIS ACTIVITY - 1-2 CLASSES

School District: ALLEGANY COUNTY School: WASHINGTON MIDDLE

Link to Content Standards: CONTENT
STANDARDS - HEALTH CONCEPTS
1.1, 1.2, 1.3, 1.4, 1.5, 2.6, 2.7, 3.1, 3.2, 3.3,
4.1, 4.3, 4.6

Brief Summary of Unit (including curricular context and unit goals):

This unit focuses on the correlation between UV rays and skin cancer. Students will become familiar with key vocabulary, tie in with science curriculum about ozone layer, have a working knowledge about types of skin cancers, treatments and preventative measures. The activity and worksheets will provide students with the background knowledge needed to develop with a group a school/community awareness campaign

This unit design packet includes:

- ☐ *completed Template pages - Stage 1, 2, and 3*
- ☐ *completed Blueprint for each performance task*
- ☐ *completed Blueprint for Other Evidence*
- ☐ *directions to students & teachers*
- ☐ *materials & resources listed*
- ☐ *suggested accommodations*
- ☐ *suggested extensions*

Status: ○ *initial draft (date - _____)* ○ *revised draft (date - _____)*
○ *peer reviewed* ○ *content reviewed* ○ *field tested* ○ *validated* ○ *anchored*

©1998 Grant Wiggins and Jay McTighe

BEST COPY AVAILABLE

## Stage 1: Identify desired results.

**What enduring understandings are desired?**

*Students will understand:* (a)

WHAT THE OZONE LAYER AND UV RAYS ARE AND HOW THEY CORRELATE WITH SKIN CANCER

THE VARIOUS TYPES AND STAGES OF SKIN CANCER AS WELL AS TREATMENT

PREVENTATIVE MEASURES AND STRATEGIES FOR ADAPTING LIFE BEHAVIORS

**What essential questions will guide this unit and focus teaching/learning?**

(b)

WHAT IS THE CORRELATION BETWEEN UV RAYS AND SKIN CANCER

WHAT PREVENTATIVE MEASURES, STEPS, PLANS CAN BE IMPLEMENTED

**What key knowledge and skills will students acquire as a result of this unit?**

(c)

*Students will know:*

WHAT THE OZONE LAYER & UV RAYS ARE

THE EFFECTS OF OVEREXPOSURE TO UV RAYS

VOCABULARY ESSENTIAL FOR UNDERSTANDING

THREE TYPES OF CANCER & WAYS OF DETECTION (ABCS)

STEPS TO PREVENT/DECREASE SKIN CANCER INCIDENCE

*Students will be able to:*

COMPARE & CONTRAST DIFFERENT TYPES OF HEALTH EFFECTS

DEVISE A PREVENTATIVE PLAN FOR THEMSELVES

DISCUSS THE VARIOUS TYPES OF SKIN CANCER & TREATMENT

©1998 Grant Wiggins and Jay McTighe



BEST COPY AVAILABLE

## Stage 2: Determine acceptable evidence.

What evidence will show that students understand?

Performance Tasks*:

d

1. COMPLETION of WEB-BASED ACTIVITY WORKSHEETS

2. USE of WEB-SITES TO LOCATE INFORMATION NEEDED TO COMPLETE WORKSHEET TASKS

3.

*Complete a Performance Task Blueprint for each task (next page).

*Other Evidence***

Quizzes, Tests, Prompts, Work Samples (summarized):

e

PRE- & POST TEST

WORKSHEETS

Unprompted Evidence: *(observations, dialogues, etc.)*

f

TEACHER OBSERVATION of STUDENTS SUCCESSFULLY NAVIGATING INTERNET

STUDENT/TEACHER DIALOGUE WHILE STUDENT IS WORKING THROUGH ACTIVITY

Student Self-Assessment:

g

ABILITY TO OBTAIN INFORMATION SUCCESSFULLY

ABILITY TO COMPLETE WORKSHEETS

ABILITY TO APPLY KNOWLEDGE TO LIFE BEHAVIORS

**Use the Blueprint for Other Evidence to describe assessments other than performance tasks

©1998 Grant Wiggins and Jay McTighe

# Performance Task Blueprint

d

Task Title: KNOW THE FACTS-BE SUN SMART

Approximate time frame: 1-2 CLASS PERIODS

What desired understandings/content standards will be assessed through this task?

- UNDERSTAND DISEASE PREVENTION
- LIFESTYLES ARE RELATED TO THE CAUSE AND PREVENTION OF DISEASE
- EARLY DETECTION AND INTERVENTION ARE IMPORTANT TO THE TREATMENT OF DISEASE

What is the purpose of this assessment task? ☒ formative ○ summative

Through what authentic performance task will students demonstrate understanding?

Task Overview (include G.R.A.S.P.S. - goal, role, audience, scenario, purpose, and standards):

GOAL: Prepare students with enough knowledge through this web activity to complete their final project: skin awareness campaign.

ROLE: To instruct students how to complete task, be a resource and serve as a facilitator for students - coordinate activity with other assistants & teachers

AUDIENCE: Students

SCENARIO: Computer Lab

PURPOSE: Students will use the Internet to acquire knowledge about UV rays, skin cancer and apply this knowledge to their project & life styles

STANDARDS: 1.1, 1.2, 1.3, 1.4, 1.5, 2.6, 2.7, 3.1, 3.2, 3.3, 4.1, 4.3, 4.6

What student products/performances will provide evidence of desired understandings?

- SUCCESSFUL COMPLETION OF WORKSHEET BASED ON CHECKLIST
- PRE AND POST TESTS
- 

By what criteria will student products/performances be evaluated?

- CHECK LIST: FOLDER
- TURNED IN WITH ALL ACTIVITIES COMPLETED & ACCURATE (AS SPECIFIED ON CHECK LIST)
- POST TEST SCORES

What type of scoring tools will be used for evaluation? • Use a separate sheet for scoring tools

○ analytic rubric ○ holistic rubric ☒ criterion (performance) list ☒ checklist

# Blueprint for Other Evidence

What other assessment evidence will be collected during this unit?

e f g

**What will be assessed?**

☒ knowledge ○ skill ☒ understanding

list _____

**How will evidence be collected?**

☒ quiz /test ☒ assignment ☒ teacher notes

**What type of assessment will be used?**

☒ selected response ○ academic prompt

☒ brief constructed response ○ observation

☒ work sample ○ other: _____

**What is the assessment's purpose?**

○ diagnostic ☒ formative ○ summative

*Describe the assessment and/or state the prompt*

Students will be able to successfully complete worksheets, be able to discuss all aspects of UV rays and skin cancer, keep a daily UV index log/checklist, and develop plans for altering life behaviors

**What will be assessed?**

○ knowledge ○ skill ○ understanding

list: _____

**How will evidence be collected?**

○ quiz /test ○ assignment ○ teacher notes

**What type of assessment will be used?**

○ selected response ○ academic prompt

○ brief constructed response ○ observation

○ work sample ○ other: _____

**What is the assessment's purpose?**

○ diagnostic ○ formative ○ summative

*Describe the assessment and/or state the prompt*

By what criteria will student responses be evaluated? (Complete if applicable.)

- Check-list
- Criterion list
- _____
- _____
- _____

- _____
- _____
- _____
- _____
- _____

What type of scoring tools will be used for evaluation? (Check if applicable.)

○ analytic rubric ○ holistic rubric

☒ criterion list ☒ checklist ○ answer key

○ analytic rubric ○ holistic rubric

○ criterion list ○ checklist ○ answer key

© 1998 Grant Wiggins and Jay McTighe



81 BEST COPY AVAILABLE

## Stage 3: Plan learning experiences and instruction.

What sequence of teaching and learning experiences will equip students to develop and demonstrate the desired understandings?

Consider the W.H.E.R.E. elements, from the *student's* perspective.

W = Provide a rubric in the form stating criteria
Attach checklist of performance criteria
Prompt detailing expectations, scoring levels, etc.

H = Need to work on this —

E = Performance tasks/Worksheets are relevant for developing life style application of knowledge gained
The planned activity supports desired outcomes and forms base for final activity

R = Students will evaluate their own habits and make adjustments to their life style
Students, working in a group, will develop a campaign for our awareness
Students will conduct pre-survey among student body before and after campaign

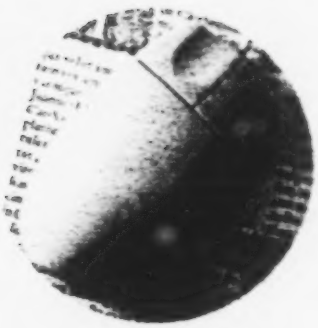
E = The culminating task, Oral Communication Awareness will reflect successful completion of this computer web based activity done here. Knowledge + Understanding of the concepts developed in this activity forms the basis for the campaign
Students will successfully evaluate their own habits and implement a healthy life style change

© 1998 Grant Wiggins and Jay McTighe



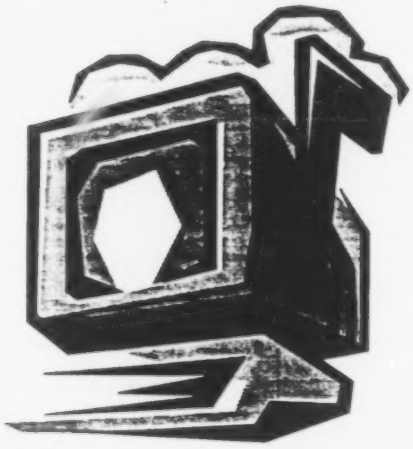
BEST COPY AVAILABLE

# APPENDIX A.10
## *Computer Training Needs Assessment*



BEST COPY AVAILABLE

# ALLEGANY COLLEGE RESEARCH BRIEF



## COMPUTER TRAINING NEEDS ASSESSMENT

### Research Method

During the summer of 1997, the Office of Institutional Research, in cooperation with the Continuing Education Division and the Allegany County Board of Education, conducted a survey of public and private school teacher computer training needs. The survey asked teachers to evaluate their usage/familiarity with computers, their knowledge/skills in 13 general software areas, and preferred dates and times for undertaking computer training. Four-hundred and seventy-nine surveys were mailed on June 20, 1997. An additional undetermined number were distributed by the Board of Education two weeks later. 356 survey responses were received by August 7, 1997. A response rate cannot be calculated.

### Gender

The respondents are primarily female (75%).

INSTITUTIONAL RESEARCH



BEST COPY AVAILABLE

## Age

Sixty two percent (62%) of the respondents is between the ages of 40 and 59. This represents an age group introduced to the computer age mid career. The mean age is 44 years.

| Age | |
|---|---|
| Not Available | 5% |
| 20-29 | 14% |
| 30-39 | 16% |
| 40-49 | 39% |
| 50-59 | 23% |
| 60-69 | 3% |
| Total | 100% |

## Computer Exposure

Home computers are owned by 73% of the respondents. Seventy-one percent reports using a computer at work.

## Computer Skills and Software Knowledge

A majority of respondents reports advanced or intermediate skills in keyboarding (76%), computer basics (62%), and word processing (59%). All other skill areas fell into the beginner/ novice level. The table below details the responses.

Percent describing skill/knowledge as: (5)=Advanced, (4)=Intermediate, (3)=Beginner, (4) Don't Use, (5) Never heard of

| | (5) | (4) | (3) | (2) | (1) | Mean Value |
|---|---|---|---|---|---|---|
| Keyboarding | 29 | 47 | 22 | 2 | 0 | 4.03 |
| Computer basics | 27 | 35 | 35 | 2 | 1 | 3.84 |
| Word processing | 15 | 44 | 30 | 10 | 1 | 3.63 |
| Operating systems | 5 | 26 | 41 | 26 | 2 | 3.05 |
| Internet/World Wide Web | 8 | 22 | 36 | 33 | 1 | 3.03 |
| E-mail | 8 | 19 | 28 | 43 | 2 | 2.90 |
| GroupWare | 9 | 20 | 30 | 31 | 10 | 2.87 |
| Spreadsheet | 4 | 14 | 36 | 42 | 4 | 2.72 |
| Database | 4 | 13 | 33 | 43 | 7 | 2.63 |
| Computer utilities | 4 | 11 | 38 | 39 | 8 | 2.62 |
| Desktop publishing software | 2 | 10 | 29 | 48 | 11 | 2.46 |
| Presentations software | 2 | 4 | 26 | 53 | 15 | 2.24 |
| Programming languages | 2 | 5 | 21 | 57 | 16 | 2.17 |

## Training Preferences

Respondents were asked to select various topics about which they would like to learn more. The World Wide-Web and Internet are the most popular, followed by spreadsheets and desktop publishing. Tabulated responses are indicated below.

| | |
|---|---|
| Internet/World Wide Web | 103 |
| Spreadsheet | 83 |
| Desktop publishing software | 82 |
| E-mail | 77 |
| Presentations software | 74 |
| Database | 70 |
| Operating systems | 66 |
| Word processing | 58 |
| Computer utilities | 48 |
| GroupWare | 46 |
| Computer basics | 39 |
| Programming languages | 26 |
| Keyboarding | 20 |

Several respondents identified other training needs. These included information about purchasing computers, multimedia software, computer-aided design software, computer graphics software, recording images, sound, and video, and home page construction.

## Scheduling Preferences

Respondents have a preference for summer classes and evening classes that run from 4-6:30 PM. The number preferring each scheduling pattern were tabulated as follows:

| | |
|---|---|
| Monday classes | 53 |
| Tuesday classes | 69 |
| Wednesday classes | 53 |
| Thursday classes | 50 |
| Weekend classes Sat from 9-12 | 65 |
| Evening classes 4-6:30 | 164 |
| Evening classes 6-9 | 96 |
| Summer classes on weekdays | 121 |
| Summer classes offered evenings | 72 |

## Teacher Comments

In an open-ended section of the questionnaire, respondents offered additional comments about their computer training needs. Many teachers reiterated their need for computer training. A handful of others indicated that they did not need or desire computer instruction. Many respondents replied that teachers and students needed better access to school computers in order to reinforce knowledge obtained through training. Several teachers indicated that computer training should be geared toward the Macintosh platform currently prevalent in area schools. A few teachers were interested in obtaining credit towards promotion by participating in training.

# APPENDIX A.11
# Technology Literacy Parent Survey

BEST COPY AVAILABLE

# Board of Education of Allegany County

108 Washington Street, P.O. Box 1724
Cumberland, Maryland 21502-0439
Telephone (301) 759-2000

M. John O'Connell
Superintendent


January 19, 2000

To: Secondary Teachers

From: Karen J. Bundy, Director of Secondary Education

Ref: Technology Literacy Parent Survey

Please give each student a copy of the attached Technology Literacy Challenge Grant Parent Survey to take home with his report card. Parents are asked to complete the survey and return it to school by February 4th. Each school is asked to return the completed surveys to me via courier by February 11, 2000.

Administrators may wish to make some of these available for parents to complete on Parent Conference Day, January 27, 2000.

cc: Principals

BEST COPY AVAILABLE

arents, please complete this survey to provide baseline data for a three-year technology grant that will provide funding to purchase computers and provide technical assistance to teachers using computers during instruction. Your cooperation in completing the survey is appreciated.

Mrs. Karen Bundy, Director of Seconda Education

# Technology Literacy Challenge Grant

## Allegany County Public/Private Schools
## Allegany County, Maryland

### Parent Computer Survey - 1999

Name: _____

School Attended By My Children : _____

*If Your children attend more than one school, please complete a form for each school.*

### Technology at Home

1. Do you have a computer at home? _____ (Yes / No) If "No", go to question 7 on the back of this page

2. What kind of computer do you have at home ? _____

3. Are you connected to the Internet? _____ (Yes / No)

4. How much time per week do your children use your home computer?

   _____ less than an hour

   _____ 1 – 2 hours

   _____ 3 – 4 hours

   _____ more than 4 hours

5. If you have Internet access at home, how much time per week do your children use it ?

   _____ less than an hour

   _____ 1 – 2 hours

   _____ 3 – 4 hours

   _____ more than 4 hours

6. What are your children using your home computer for ? *Check any of the following that apply*

| Personal | School Related |
|---|---|
| _____ Word Processing | _____ Word Processing |
| _____ Spreadsheets | _____ Spreadsheets |
| _____ Graphics | _____ Graphics |
| _____ e-mail | _____ e-mail |
| _____ Web Browsing | _____ Web Browsing |
| _____ Multimedia Presentations | _____ Multimedia Presentations |



*The survey continues on the reverse side.*

*Thank You ;<)*

BEST COPY AVAILABLE

## School Computer Use

7. Do you know the number of computers available for your children's use at their school ? _____
Yes / No

8. How often does your child use a computer in school ?
_____ Once a Day
_____ Once a Week
_____ Twice a Week
_____ Once a Month
_____ Twice a Month

9. Which of your child's classes use computers as part of the curriculum ?
*Check any that apply*

_____ Reading _____ Social Studies ____ Language Arts
_____ Mathematics _____ Science ____ Consumer Education
_____ Physical Education _____ Technology ____ Health
_____ Other _____
*Please Describe*

10. What computer programs does your child use as part of the curriculum while at school ?

- _____
- _____
- _____
- _____

Do you feel your child's exposure to technology in school is adequately preparing him/her to deal with the technology they will encounter in their everyday life ?

_____
Yes / No

Please Explain:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Surveys are to be returned to school by February 4, 2000.

Schools should forward completed surveys to Mrs. Bundy at the Central Officeby February 11th,2000.

## REFERENCES

U.S. Department of Education. 1998. An educator's guide to evaluating the use of technology in schools and classrooms. (December 1998). URL:http://www.ed.gov/pubs/EdTechGuide/title.html.